UNITED STATES DISTRICT COURT
DISTRICT OF MASSACHUSETTS

G., a 12-year-old minor suing by a fictitious name for privacy reasons. Mother and Father suing under fictitious names to protect the identity and privacy of G., their minor child, Plaintiffs,	)	
vs.	)	Case No. 15cv40116-TSH
The Fay School, by and through its Board of Trustees, and Robert Gustavson, Defendants.	)	

BEFORE: The Honorable Timothy S. Hillman

Daubert Motion Hearing

United States District Court
Courtroom No. 2
595 Main Street
Worcester, Massachusetts
July 14, 2016

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I N D E X

E X H I B I T S

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P R O C E E D I N G S

(The following proceedings were held in open court before the Honorable Timothy S. Hillman, United States District Judge, United States District Court, District of Massachusetts, at the Donohue Federal Building & United States Courthouse, 595 Main Street, Worcester, Massachusetts, on July 14, 2016.)

THE CLERK: All rise.

The United States District Court of Massachusetts is now in session, the Honorable Timothy Hillman presiding. Please be seated.

G. versus The Fay School, et al., Civil Action 15-40116 will now be heard before this court.

Counsel, please identify yourselves for the record.

MR. MARKHAM: Good morning. John Markham and Bridget Zerner for the plaintiffs, your Honor.

THE COURT: Good morning.

MS. ZERNER: Good morning.

MS. McKEAN: Good morning, your Honor. Jaimie McKean and Brian Doyle on behalf of the defendants.

THE COURT: Good morning.

This is your motion.

MS. McKEAN: This is my motion. Thank you, your Honor.

THE COURT: Just give me one second.

MR. MARKHAM: Your Honor.

THE COURT: Yes.

MR. MARKHAM: Excuse me one second. One of the clients, the mother, is here, and I would like her to sit so we can consult with her. Is that all right?

THE COURT: Of course. Of course.

MR. MARKHAM: Thank you.

THE COURT: Good morning.

MS. McKEAN: Good morning, your Honor. As you know, we have moved to exclude the five experts of the plaintiffs because their opinions have failed to meet the standards for admissibility, are unreliable, and their opinions will not assist the jury in understanding issues in dispute in this case.

The plaintiffs have five expert witnesses. They are Dr. Jeanne Hubbuch and Dr. Martha Herbert, who are both medical doctors, who are being offered to testify that plaintiff G, the child in this case, a 12-year-old boy, who previously attended my client's school, The Fay School in Southborough, Massachusetts, they're claiming that he has something called Electromagnetic Hypersensitivity Syndrome, also referred to as EHS. And these two doctors are going to testify that G's EHS is caused by the WI-FI, the wireless internet at The Fay School. In other words, Dr. Hubbuch and Dr. Herbert are being offered by the plaintiffs to testify as to specific causation in this case.

In addition to Dr. Hubbuch and Dr. Herbert, the plaintiffs are offering Dr. David Carpenter to testify. Dr. Carpenter is not a licensed physician or an engineer, so he's not being offered to testify as to specific causation, but rather is being offered to testify on general causation.

My understanding is that his testimony is going to be that EHS is a real affliction and that can cause symptoms like those exhibited by G. They are claiming that G experienced -- the predominant symptom was a headache, but in addition they're claiming that he experienced symptoms like ringing of the ears, nosebleeds, dizziness.

In addition to those three experts, my understanding is the plaintiffs intend to offer or are trying to offer Dr. Karl Maret. Dr. Maret is not a licensed physician. He is not an engineer. So he is not being offered to testify to causation in this case or to any issue in dispute.

Rather, he's being offered to testify about how a dosimeter works, and a dosimeter is a device that the plaintiffs, not Mr. -- not Dr. Maret, but the plaintiffs used at Fay School to take some measurements of electromagnetic frequencies, referred to in the briefs as EMFs, from the WI-FI at Fay School. And my understanding is that Dr. Maret is being offered to testify about how a dosimeter works and what the readings were at the school. Now, he's not going to testify as to the significance of those readings at all, just simply this

is what the readings were.

Finally, my understanding is that the plaintiffs are offering a Mr. Robert Bowdoin, who's an electrician, and he's being offered to testify about the accommodation that the plaintiffs are seeking in this case, that is, the plaintiffs request that Fay School use wired internet connections for all of the students in G's classrooms, and that's about ten classrooms at Fay School, and to use those wired internet connections instead of the wireless internet that Fay presently uses. As a result, the wireless connections will need to be removed from those ten classrooms when G is present if the plaintiffs obtain what they're seeking in this case.

Now, in order to show that these five experts have failed to meet the standards of admissibility in this case, the defendants plan to call our own experts to testify about the deficiencies in the plaintiffs' experts and their opinions. And just briefly, as far as who we're going to call and when we're going to call them before I call my first witness.

At today's hearing, we intend to call a Dr. Edward Boyer. He's here today. Dr. Boyer is the Chief of the Division of Medical Toxicology at the Department of Emergency Medicine at UMass Medical School here in Worcester. His expert report is attached to our motion papers at Exhibit 21.

Dr. Boyer will testify today and explain to you the three main reasons that both Dr. Hubbuch and Dr. Herbert's

testimony should be excluded in this case, and those three reasons are: That they are not qualified to give a diagnosis of EHS; secondly, they did not consider adequate facts or data in rendering their opinions; and third, that they didn't employ scientifically reliable methods in coming to their diagnosis.

Now, in response to us putting up Dr. Boyer to discuss why Dr. Herbert and Dr. Hubbuch should be excluded from testifying, I anticipate that Mr. Markham will call Dr. Hubbuch and Dr. Herbert, but as they were not available to testify today, my understanding is that Mr. Markham will be calling them at the later hearing dates in late July.

At the next hearing date, we also will be calling additional expert witnesses regarding plaintiffs' other experts. We intend to call a Dr. Kenneth Foster. Dr. Foster is a professor of engineering -- excuse me. He's a Professional Engineer, and he's a professor in the Department of Bioengineering at the University of Pennsylvania. He has spent the majority of his career researching and studying the biological effects and health implications of EMS.

Dr. Foster will explain to you the reasons why Dr. Carpenter's opinions should not be allowed in this case, and that he shouldn't be allowed to testify, including the fact that Dr. Carpenter's opinions on the alleged damages of low-level EMS, such as those from WI-FI are unreliable, and they have been repeatedly rejected by tribunals both here in

the United States and internationally.

Dr. Foster will also tell you about the fact that Dr. Carpenter's opinions are not based on any reliable methods of assessing scientific evidence, and that also Dr. Carpenter's theory that there are no safe levels of exposures to EMF is not generally accepted by the relevant scientific community.

Now, in addition --

THE COURT: That's going to be from Foster?

MS. McKEAN: That will from Dr. Foster, correct.

In addition to Dr. Foster testifying about Dr. Carpenter, we also will be calling a Dr. Stacy Eliti to testify about Dr. Carpenter's -- some -- some portions of Dr. Carpenter's opinions.

Dr. Eliti is a psychologist and professor of psychology. She actually has conducted double-blind studies of individuals claiming to have EHS, and she's going to tell you about the studies she has conducted, about the findings of those studies, and she will also explain to you that there is no general acceptance by the relevant scientific community of Dr. Carpenter's theory that EHS is a reliable diagnosis, especially when we're talking about the low-level EMFs that are emitted from WI-FI.

In addition to testifying about why Dr. Carpenter's testimony should be excluded, we are also going to call Dr. Foster to testify about the deficiencies in Dr. Maret's

opinions.

Now, Dr. Foster will explain to you that Dr. Maret's testimony does not provide any scientific opinions that relate to any issue in dispute in this case. He'll explain to you that Dr. Maret's opinions are based on insufficient facts and data, especially because Dr. Maret didn't take the readings that he's going to be testifying about. He didn't supervise those readings. He can't even verify that the readings were taken at the Fay School. And he is not going to explain to you the significance of those readings. So as a result, Dr. Foster will explain to you why Dr. Maret should be excluded.

Finally, at the next hearing dates, and I anticipate this will probably be the last day of the hearing dates, we will be calling David Maxson. David Maxson is a wireless communications professional who conducted a radio frequency evaluation of the school's WI-FI, and he advised the school on certain changes to make in order to reduce G's exposure to EMFs from the school's WI-FI in response to the plaintiffs' request for accommodations.

Mr. Maxson will explain to you concerns with Mr. Bowdoin's testimony, mainly that Mr. Bowdoin's opinions do not relate to any issue in dispute in this case. So his testimony won't be helpful to the jury. Also, Mr. Bowdoin lacks the education and experience to provide testimony regarding the reasonableness of the plaintiffs' accommodation

requests, or the impact that it will have on the school, and the school's environmental education.

And finally, Mr. Maxson will explain to you the facts and data that Mr. Bowdoin did not consider in rendering his opinion; and, therefore, his opinion is not based on sufficient facts or data.

And the -- it's the plaintiffs -- excuse me. It's the defendants' position that after the testimony of all the defendants' experts, we believe it will be clear as to why the opinions of the plaintiffs' five purported experts fail to meet the *Daubert* standards of admissibility.

We have Dr. Boyer present here today, and he is ready to testify whenever your Honor would prefer it. I don't know if you want to give the plaintiffs a chance to talk first or just go ahead and call my witness.

THE COURT: I will give the plaintiffs a chance to make an opening, if you would like. If not, if you want to reserve --

MR. MARKHAM: Well, you know, I'll just say a few words now, if I may, your Honor. Thank you.

THE COURT: Thank you, Ms. McKean.

MS. McKEAN: Thank you.

MR. MARKHAM: Since this hearing is going to span over three days, and both parties thank your Honor for taking the time, I just want to focus on what I think is going to happen

today, and that has to do not with the measurements that Dr. Maret will testify about, if the Court allows. That's for next time, and not with the gentleman who is going to talk about how two of the many classrooms at Fay could be easily reconfigured. The parents agreed to pay for it. It's not that much money, but they've agreed to pay for it so that there could be some WI-FI free rooms.

If the Court in its -- and it's a court matter whether there's injunctive relief, if it thinks that's appropriate after hearing all of the evidence, including the fact evidence. So today is not going to be about those, and it's not going to be about any of our expert doctor witnesses and why they've made the diagnosis they've made. It's only going to it be one of their witnesses, who's going to take shots at the methodology used by our two doctors.

And I just want the Court to consider and ask that it keep in mind as we go through this that *Daubert* does not put this Court in a position to call the ball, which experts are more believable, although we think that the jury will believe ours.

The question here is whether the material on which our witnesses want to -- want to offer an opinion is relevant, and since it's about whether there is a syndrome called Electromagnetic Hypersensitivity Syndrome, and if so, is that at Fay what was causing all of G's problems.

Certainly, that's a relevant opinion.

We believe that they have the qualifications. That will be for the Court to decide, but we think that manifestly they have the qualifications. And the test again is not who's right or wrong, but whether they have used the appropriate methodology, and we believe that the Court at the end of the day will find that they have.

The rest, even if the Court were to find that I'm not arguing to this concession. I'm just trying to establish the broad scope here. Even if the Court were to find that our witness test -- that our opinion testimony was weak or tentative, the rest is for cross-examination to the jury. That is what the First Circuit has said over and over again, whether it's in reversing the lower court decisions for calling something guesswork that wasn't, or whether it was just because the Court made a call.

And I respectfully submit that when you get to the end of this hearing, your Honor, you will conclude that there is a big disagreement between the witnesses as to the issues in this case, a very big different agreement. That's obvious from the pleadings. But it is not a disagreement that should be sorted out in the *Daubert* context in this particular case. Several more points I would like to make.

First, the -- the witness today, I believe, is going to testify about three things: One, that Dr. Hubbuch didn't do

what she was supposed to do; second, that Dr. Herbert didn't do what she was supposed to do and couldn't; and third, in his report anyway, although counsel didn't mention it in her opening presentation, he testified -- he states over and over again that there's no such things as EHS. It's a sensit -- it's a -- nobody knows what it is, nobody knows what causes it, it's an aggregate of symptoms. It's mush. There are too many authoritative sources that have recognized it.

The Social Security Administration qualifies it as a disability, as the Tenth Circuit noted in a case we cited in our brief.

The United States Access Board, which I didn't know about until this case came along, but it's the board that was appointed by Congress to make sure that buildings like this, federal buildings, are accessible. You know, the obvious things are do they have a wheelchair ramp. Is there something for people who are hard of hearing or sight disabled, but it also specifically has a provision in it about accommodating people coming into federal buildings that have EHS. Health Canada, Austria have recognized it. Some of our courts have mentioned it, and there's no decision that says it doesn't exist. So while it is new, *Daubert* replaced Frye at the prior expert witness case about -- because it was about novel expert opinions that had not been generally accepted. The general acceptance test is no longer the test; in other words, all the

extensive doctors don't have to agree. It's just whether this is plausible.

And so I respectfully submit, your Honor -- thank you for giving me that opening -- that will be the focus of what I think will be our brief cross-examination today. We'll save our fire for the jury trial. We're just going to be going into the matters as they relate to the *Daubert* inquiry, not the nice hopeful cross-examination we would do at trial, if your Honor allows it. And that will be the focus of our presentation today.

Thank you.

THE COURT: Thank you, Mr. Markham.

Ms. McKean, so Boyer or -- Mr. Boyer or Dr. Boyer --

MS. McKEAN: Dr. Boyer.

THE COURT: -- is going to be your first witness?

MS. McKEAN: That's correct, and --

THE COURT: And he's going to talk about Hebert -- Herbert and Hubbuch?

MS. McKEAN: Correct. He's going to directly discuss why there their opinions are not admissible so --

THE COURT: Yeah. And so just -- and so my question is focus me on -- so are we talking -- is -- and I -- I read the brief. I did not read all of the thousand pages that you each submitted. We're working our way through it, I promise, but is this going to be -- are you -- are we going to be

talking about reliable principles or methodology?

MS. McKEAN: We're going to be talking about methodology, but we're also going to be talking about the failure to -- we're going to be talking about three things. We are going to be talking about their qualifications, because we do think they're not qualified to testify about or qualified to diagnose EHS of G.

But then, secondly, we're going to be talking about the fact that they didn't consider adequate facts and data in rendering their opinions.

And then thirdly, that they didn't employ reliable methods in coming to their diagnosis. So those are the three issues that he will be touching upon today.

THE COURT: Thank you. You may call your witness. Thank you.

MS. McKEAN: Dr. Boyer.

THE CLERK: Take the witness stand. Sir, please raise your right hand.

EDWARD WRIGHT BOYER, M.D., SWORN

THE CLERK: Thank you. You may be seated. And would you please state your name and spell it for the record.

THE WITNESS: My name is Edward Wright Boyer. W-R-I-G-H-T -- can you hear me okay?

THE COURT: Yes. And your last name?

THE WITNESS: Boyer, B-O-Y-E-R.

THE COURT: Thank you.

DIRECT EXAMINATION

BY MS. McKEAN:

Q. Good morning, Dr. Boyer. Can you please tell us your occupation.

A. I'm an emergency physician and a medical toxicologist.

Q. Where are you presently employed?

A. I work at UMass Memorial Medical Center, and I'm also one of the staff toxicologists at Children's Hospital Boston.

Q. What is the position that you presently hold?

A. I'm Chief of the Division of Medical Toxicology at UMass Memorial Medical Center, and I am Professor of Emergency Medicine at University of Massachusetts Medical School.

Q. Dr. Boyer, do you hold any academic degrees?

A. I do.

Q. Can you tell us what those are?

A. I got my B.A. in chemistry from Vanderbilt University in 1983; I got my Ph.D. from Columbia University in synthetic organic chemistry in 1987; and I got my M.D. degree from Columbia University College of Physicians and Surgeons in 1995.

Q. Do you know what the American Board of Medical Specialties is?

A. I do.

Q. Can you tell us what that is, please.

A. The American Board of Medical Specialties is the

overarching authority which determines which medical specialties are available to have board certification. They have a meeting of the minds to determine which specialties exist and then they determine which ones are eligible to sit for board certification.

Q. How -- did you obtain any board certifications from the American Board of Medical Specialties?

A. My certification is from one of the boards with ABMS, and it is in emergency medicine and in medical toxicology.

Q. So when you say ABMS, are you referring to the American Board of Medical Specialties?

A. Yes.

Q. And so you said you have --

A. Excuse me.

Q. -- a board certification in emergency medicine and in medical toxicology?

A. Yes.

Q. How did you obtain those board certifications from ABMS?

A. So let me take emergency medicine first. You have to attend a credentialed medical school. After successfully graduating from medical school, you complete either a three- or four-year course of training. I completed a four-year course of training in an accreditation Council of Graduate Medical Education approved residency training programs. After you've successfully completed training, you are eligible to sit for

the board examination, which is a validated and continually updated examination.

Q. So did you -- I'm sorry.

A. Or medical toxicology, you must do all of those tasks plus you must complete a two-year course of training again in an accredited training program and then sit for board examination.

Q. Did you complete both that four-year training -- four years of the training that you just discussed for emergency medicine followed by the two years of training for medical toxicology?

A. Yes, that's correct.

Q. Did you then take any board test to receive your board certification from the American Board of Medical Specialties?

A. I did. I took the -- and passed the board certification exam in emergency medicine and medical toxicology.

Q. Is certification by the ABMS difficult to obtain?

A. The medical toxicology board examination has had a fail rate that has been around 70 percent in the past.

Q. What is the purpose of being certified by the American Board of Medical Specialties?

A. I think it provides three things. First, for the -- for the physician, you know, it gets certification that you've done your training right.

For patients, it conveys the confidence that the person who is treating you is actually trained and prepared to

work in the area of specialization that they claim. And more mundane matters, from an insurance company's perspective, you don't nowadays get compensated for the care that you provide unless you are certified and unless you are a board certified member of an ABMS specialty.

Q. Now, when you say "board certified," and you're referring to the American Board of Medical Specialties?

A. I'm referring to the American Board of Medical Specialties.

Q. Not any type -- any other type of board certification?

A. Not that I'm aware of.

Q. As a medical discipline, what is the focus of medical toxicology?

A. The focus of medical toxicology is literally anything outside of the human body that can affect the human body. So it involves drug overdoses, poisonings, adverse drug events, drug interactions, and it also includes environmental exposures, things in the environment that can affect the human body, every place from heat stroke and hypothermia to snake bites to vibration injuries and sound poisonings. So it's anything outside the human body that can affect the human body.

Q. Did your training -- your medical toxicology training involve training in environmental exposures?

A. Yes, it did. In fact, part of my training involved working two years in the Pediatric Environmental Health Center

Clinic at Children's Hospital.

Q. And what is that clinic?

A. It's where children -- most of the patients present with lead toxicity, but there are other individuals who will present with questions of environmental exposures, and it is our job to assess whether or not an exposure was, in fact, present; and if it was present, if there was any medical outcome from it; if there was a medical outcome what the medical intervention would be.

Q. Did your training also involve the proper methodologies to employ and diagnosing individuals who believed they've been harmed by environmental exposure?

A. Absolutely. That was part and parcel of practicing at the Pediatric Environmental Health Center.

Q. What did that training involve?

A. It involved seeing patients in the clinic, doing a detailed toxicologic and environmental history, a detailed physical examination, a detailed medical history; and then after getting all the data, discussing it with the attending at the clinic visit, and then we had a follow-up visit later on where we discussed it with other clinicians.

Q. How many years of clinical practice experience do you have in evaluating and treating patients who believe they've been exposed to toxicities?

A. Well, if you include residency training it goes all the

way back to 1995. Functioning as a toxicologist, if you include training until 1999, when I started fellowship training as an attending in medical toxicology since 2001.

Q. And in that practice, that clinical practice, have you treated patients who believe they've been exposed to environmental toxicities?

A. Yes, I have.

Q. How about teaching, have you done any teaching on the proper methods and evaluation and treating of patients who believe they've been exposed to toxicities, including environmental exposures?

A. Our teaching occurs in several different formats. Sometimes it's an actual lecture format where I stand up and lecture residents in a didactic way. Sometimes it involves a bedside evaluation, but we also have a weekly clinic where -- sorry -- a weekly conference where we discuss the previous cases on an ongoing basis. We have it every week unless we have a holiday or a national -- a national conference going on. We've done that since 2001.

Q. And you keep saying "we."

Are you doing the teaching that you just talked about?

A. Oh, yeah. I'm doing this, but it is also alongside my other partners as well.

Q. How long have you been doing the teaching you just talked about?

A. I've been doing it since 2001. As we amassed faculty then other people would come into the teaching mix, but I have been doing it since 2001 in that capacity.

Q. And where have you been doing that teaching?

A. It has been primarily at UMass Memorial Medical Center or when I'm providing clinical services at Children's Hospital. I do it there too.

Q. With Children's Hospital in Boston?

A. Children's Hospital in Boston.

Q. Have you done any -- strike that.

Do you have any experience in assessing the quality of medical literature that has been written about the adverse effects of exposures?

A. Yes, I do. I've -- I've served on the editorial board of ToxED, which was a toxicology resource for clinicians. I've served on the editorial board of the Journal of Medical Toxicology. I sit on the committee that publishes the New England Journal of Medicine, and I also have served on NIH review committees, scientific review committees. And the purpose of those is to receive proposals and evaluate the science that's contained within them, and then provide a score and a description of why it is good science and where it is deficient science, and I've done that not only for NIH, but also for now National Science Foundation, and couple of it several years ago, the Food and Drug Administration as well.

Q. Do you have an understanding in this case as to whether the plaintiffs are claiming that their son is being adversely affected by an environmental exposure?

A. I'm sorry. Could you say that again.

Q. Absolutely. Do you have an understanding in this case as to whether the plaintiffs are claiming that their son is being adversely affected by an environmental exposure?

A. Yes, I do.

Q. Can you tell us what that exposure that the plaintiffs are claiming is harming their son?

A. The claimed exposure is WI-FI at Fay School is causing adverse health events in their son.

Q. Now, is it anything particular that is coming from the WI-FI that they claim is harmful to their child?

A. It's the electromagnetic field produced by the WI-FI.

Q. And if I use the term "EMFs" when I'm referring to electromagnetic fields from WI-FI, will you understand what I mean?

A. Yes.

Q. In your medical practice, have you evaluated patients who believe that their symptoms were related to EMF?

A. Yes, I have.

Q. Did you receive any information or training on this topic during your training for ABMS board certification in medical toxicology?

A. Yes, I did. Michael Shannon -- Michael Shannon was one of the lead faculty in the Pediatric Environmental Health Clinic, and it was a -- it was a teaching point of his because of his interest in pediatric environmental health.

Q. Since your training have you undertaken any evaluation of studies or literature written about this topic?

A. Intermittently, yes, from time to time.

Q. Have you kept up-to-date on this topic?

A. Yes, I have.

Q. Did you examine in this case Dr. Hubbuch and Dr. Herbert's qualifications to determine if they are qualified to render a specific causation determination in this case?

A. I did.

Q. Do you believe they're qualified?

A. I do not.

Q. Did you examine whether Dr. Hubbuch and Dr. Herbert's opinions are based on sufficient facts or data?

A. I did.

Q. Do you believe that their opinions are based on sufficient facts or data?

A. They are not.

Q. Did you also examine whether Dr. Hubbuch and Dr. Herbert used scientifically reliable methods to make their causation determination?

A. I did.

Q. Do you believe they used reliable methods?
A. I do not believe they did.
Q. I'd like to take each of those three issues separately today, okay?
A. All right.
Q. So I would like to start with the qualifications of Dr. Hubbuch.
Did you review those qualifications?
A. I did.
Q. Did you also review the plaintiffs' opposition papers in this case?
A. I did.
Q. And did you look at the arguments they made in their opposition as to why Dr. Herbert and Dr. Hubbuch are qualified to render the opinion they did in this case?
A. I'm sorry. Could you say that again.
Q. Absolutely. You said you looked at the opposition that the plaintiffs filed to the *Daubert* motion; correct?
A. Yes.
Q. And did you look at the specific sections of that opposition where the plaintiffs detailed the qualifications that Dr. Hubbuch and Dr. Herbert believe -- have that they believe qualifies them to testify in this case?
A. I have read those.
THE COURT: Hold up.

Maybe you can help me with this, Mr. Markham. What attachment is that to your memo, the CVs?

MR. MARKHAM: The CV of our experts are attached along with their expert reports.

THE COURT: Yeah.

MR. MARKHAM: And those are --

THE COURT: I see --

MR. MARKHAM: I believe -- we didn't do -- we didn't -- we didn't flood your molecularly electronic space with those because those exhibits were produced by the defendants.

THE COURT: I think you flooded our space but not with those.

MR. MARKHAM: Right. Well, we would have flooded it more quickly.

Okay. But, however, look at Defendants' Exhibits 19 and 20.

THE COURT: Hold up. Hold up.

MS. McKEAN: Your Honor, Exhibits 19 and 20 are Dr. Hubbuch and Dr. Herbert's reports. They do not have their CVs attached to their report.

THE COURT: That's what I thought.

MS. McKEAN: The -- the information that I'm referring to with the witness, your Honor, is contained in the opposition papers, and specifically I have it, and I'm going to ask the

witness about it. It starts at page 31.

THE COURT: Of what exhibit?

MS. McKEAN: The memo in support of the opposition.

THE COURT: Okay. So the memo itself. Okay. You got it.

MS. McKEAN: Yes, I have it right here.

THE COURT: Hold on. Let me get it up. Actually, you know what, can you print it.

THE WITNESS: Can I have a hard copy, please?

THE COURT: Do you have a hot screen? Is your screen hot?

THE WITNESS: It's on. I can barely read it.

MS. McKEAN: I'm going to ask you questions.

THE WITNESS: Yeah, I'm just saying I can barely read it.

MS. McKEAN: Page 31.

MR. MARKHAM: Excuse me. Can I approach counsel for a second. We have -- we have an exhibit that has the CV on it, specifically if your Honor wants to admit it.

THE COURT: Hold it for now. I might. I might.

MR. MARKHAM: We have it.

THE COURT: Thank you.

MS. McKEAN: And, your Honor, just so there's no confusion about this particular witness. His CV is attached to his expert report, which is contained at Exhibit 21 to our

motion to exclude the plaintiffs' experts.

THE COURT: Thank you.

MS. McKEAN: Can you see it now?

THE WITNESS: Better.

BY MS. McKEAN:

Q. Okay. So Dr. Boyer, I've put up on the screen page 31 of plaintiffs' opposition to the motion to exclude the plaintiffs' experts, and specifically I've put up the section dealing with Dr. Hubbuch's qualifications.

Do you see that?

A. I see that.

Q. Did you review this in determining whether or as part of your determination as to whether Dr. Hubbuch was qualified to testify in this case?

A. I did.

Q. Now, I see in this paragraph -- specifically, the indented paragraph. I can circle it.

Do you see the section that I've circled --

A. Yeah.

Q. -- or put a line next to --

A. Yeah.

Q. -- that the plaintiffs' indicate that Dr. Hubbuch is board certified in family practice and in environmental medicine.

Do you see that?

A. I do.

Q. Did you determine whether or not Dr. Hubbuch is board certified by the ABMS in family practice?
A. Yes. Family practice is an AB -- family practice is an ABMS approved medical specialty.
Q. Do you have an opinion as to whether ABMS board certification in family practice qualifies Dr. Hubbuch to testify as to specific causation in this case?
A. It does not.
Q. Can you tell me why it doesn't?
A. I've reviewed the core curriculum for family practice residency training, and it makes no mention of environmental training, training in environmental exposures.
Q. Now, Dr. Hubbuch also indicates in this paragraph that she is board certified in environmental medicine.

Do you see that?

A. I do.
Q. Do you know if Dr. Hubbuch is board certified by the ABMS in environmental medicine?
A. She cannot be.
Q. Why not?
A. Environmental medicine is not an ABMS approved medical specialty or medical subspecialty.
Q. So there's no such certification?
A. Not from ABMS there's not.
Q. Which ABMS certification would Dr. Hubbuch need to have

completed to have been trained in diagnosing environmental exposures?

A. She would have to be trained in my sub board, which is medical toxicology.

Q. Any indication she received such training or certification?

A. There's none.

Q. Now, further down in this paragraph, and I'll put a little green line/arrow next to it. Dr. Hubbuch indicates that she's a member of the American Academy of Environmental Medicine.

Do you see that?

A. I do.

Q. And she talks about taking their basic courses and attending their annual meetings.

Do you see that?

A. I do.

Q. Is that equivalent to ABMS board certification at all?

A. It is not.

Q. Why not?

A. The American Academy of Environmental Medicine does not offer the same rigor or training. You do not have to have completed fellowship training to have become a member. You do not have to have passed, as far as I can tell, a validated examination of the content related to the material that they -- that they represent. So I can't tell anything about

their board certification process or what you do, even what their qualifications are even to join.

Q. Is being a member of the American Academy of Environmental medicine in any way equivalent to receiving board certification from ABMS?

A. It is not.

Q. Why not?

A. Because once again, I can't tell what you have to be to actually join it. There seems to be no requirement for subspecialized training. There seems to be no requirement to pass a validated examination.

Q. Now, she talks -- I'm sorry.

A. The requirements -- sorry. The requirements for ABMS medical subspecialities are transparent. You're told what you have to do. For the American Academy of Environmental Medicine it's very opaque. I can't tell what the qualifications are supposed to be.

Q. She talks about taking basic courses with the American Academy of Environmental Medicine.

Do you see that?

A. I do.

Q. Did you find some information about the courses they offer?

A. I did.

Q. Are they in any way equivalent to courses in training that

you took to receive your ABMS certification?
A. They are not. I had to pass a board examination after a dedicated two-year course of study. The courses offered by the American Academy of Environmental Medicine are credentialed by the Accreditation Council of Continuing Medical Education, but that doesn't say anything about whether or not the information is scientific -- scientifically accurate, whether or not it's medically correct, whether or not the treatments or diagnostic modalities are correct. It doesn't say anything other than what the ACG -- Accreditation Council of Continuing Medical Education does, which is identify whether or not a conflict of interest is present. Even if there's a conflict which is present, you can still go ahead and give the talk. You just have to declare the conflict.
Q. The courses that are offered by the American Academy of Environmental Medicine, are they equivalent to -- or are they continuing medical education courses?
A. There's a -- there's a growing recognition that standing up, listening to a lecture is not an adequate way to educate physicians or change their clinical practice. To do that you have to do things -- you have to do educational things in a different way and, you know, their entire institute, such as the Harvard Macy Institute, which are dedicated towards finding better ways of educating clinicians than just giving a talk.
Q. Did you find any evidence that Dr. Hubbuch did anything

more than attend a few talks at the American Academy of Environmental Medicine?

A. I -- I see no evidence that she did.

Q. You mentioned earlier that one of the reasons that a doctor would want to get ABMS certification is so that insurance companies will cover your services; correct?

A. That is correct.

Q. Do you have any knowledge as to whether insurance companies are involved at all in Dr. Hubbuch's practice?

A. I'm not aware that they are. She seems to operate a cash business.

Q. So from your review, Dr. Hubbuch's services do not appear to be covered by any insurance company?

A. They do not.

Q. We talked earlier about your training and experience with diagnosing individuals who believe they're being harmed by an environmental exposure; correct?

A. Yes.

Q. Based on your review of Dr. Hubbuch's qualifications did you see any equivalent training or experience of Dr. Hubbuch in diagnosing individuals with environmental exposures?

A. I do not.

Q. Do you believe that Dr. Hubbuch is qualified to testify in this case?

A. I do not.

Q. Why not?
A. Because she doesn't have the education, the training, or the clinical practice experience to reliably make a diagnosis in this case.
Q. Thank you. Doctor, moving on to Dr. Herbert.
Did you review Dr. Herbert's qualifications?
A. I did.
Q. And did you look at plaintiffs' opposition to the motion to exclude plaintiffs' experts to see what the plaintiff said about Dr. Herbert's qualifications in that opposition?
A. I did.
Q. Do you have a copy of the opposition?
A. I do not.
Q. I'm going to put up page 39 of the opposition. And if you can't read it let me know. I'll see if I can get you a copy of it.
Can you read that paragraph clearly?
A. I can.
Q. Is this the qualifications that you read about with respect to Dr. Herbert in plaintiffs' opposition?
A. Yes, it is.
Q. Now, I see in the first -- the first line of this section, it indicates that Dr. Herbert is a pediatric neurologist and a neuroscientist at Mass. General Hospital.
Do you see that?

A. I do.
Q. In your opinion, is Dr. Herbert's experience as a pediatric neurologist enough to qualify her to testify as to specific causation in this case?
A. It is not.
Q. Why not?
A. Aside from the fact that the training is fundamentally different than assessment of toxicologic and environmental issues, my clinical experience has been the pediatric neurologists and adult neurologists, general neurologists, come to us, the medical toxicologists' world, to answer questions about toxicity and environmental exposures.
Q. So, in other words, in your practice typically if a neurologist finds or believes that there is an environmental exposure of their patient, they would then come to you or refer the patient to you?
A. That's correct.
Q. Before G, do you know if Dr. Herbert had ever treated a patient claiming to have Electromagnetic Hypersensitivity Syndrome?
A. I am not aware that she did.
Q. Do you have an understanding as to whether Dr. Herbert's practice has focused on treating patients that exhibit symptoms like those claimed by G in this case?
A. I'm sorry. Say that again.

Q. Absolutely. You looked at Dr. Herbert's qualifications; correct?
A. Yes.
Q. And in looking at those qualifications did you determine whether or not her practice has focused on treating patients that exhibit symptoms like those claimed by G in this case?
A. It's unclear that it does. Her practice and research seems to emphasize autism.
Q. From your review does her practice focus at all on treating patients with headaches?
A. Not that I'm aware.
Q. From your review, does Dr. Herbert's practice focus on treating patients with ear ringing?
A. Not that I'm aware of.
Q. How about dizziness?
A. Again, not that I'm aware of.
Q. How about nosebleeds?
A. No.
Q. So from your review, she has no specialty in the particular symptoms that G claims to have suffered in this case?
A. That is correct.
Q. We talked earlier about your training and experience with diagnosing individuals who believe they're being harmed by an environmental exposure; correct?

A. Correct.
Q. Based on your review of Dr. Herbert's qualifications, do you see any equivalent training or experience of Dr. Herbert in diagnosing individuals with environmental exposures?
A. I do not.
Q. Does she have the requisite qualifications to testify in this case?
A. I do not believe she does.
Q. Why not?
A. She lacks the training, education, and clinical practice experience to guide her.
Q. Doctor, you also mentioned earlier that you do not believe that Dr. Hubbuch and Dr. Herbert's opinions were based on sufficient facts; is that correct?
A. That is correct.
Q. How did you go about determining that?
A. I looked through the medical records as well as documents, which were -- which I requested, and then examined their reports in light of them.
Q. When you say "the medical records," are you referring to only the medical records of Dr. Hubbuch and Dr. Herbert?
A. No, I also examined primary care practice documents, too.
Q. And when you reviewed G's medical records, did you look to see whether Dr. Hubbuch and Dr. Herbert had considered certain facts that are contained in those medical records in rendering

their opinions in this case?

A. I did look to see whether or not they did.

Q. Did you find instances where they didn't sufficiently consider certain facts or data?

A. There were many.

MS. McKEAN: Your Honor, we have premarked Defendants' Exhibit 1. May I approach the witness? I have a hard copy. I also have a hard copy for your Honor. And I have previously given a hard copy to Mr. Markham.

THE COURT: Please.

And is there any objection?

MR. MARKHAM: No, none, your Honor.

THE COURT: So let's mark that.

(Exhibit No. 1 was received into evidence.)

Q. Doctor, as we go through, I'm also going to put these up on the screen, but I've given you the hard copy so you can follow along in case I have any technological difficulties over here.

In Tab 1 of defendants' Exhibit 1, there is -- this document that I've just put up on the screen.

Do you see that, Doctor?

A. I do.

Q. And do you see that document is dated July 23rd, 2014?

A. Yes, that's correct.

Q. Is this one of the documents you reviewed to determine

whether Dr. Hubbuch and Dr. Herbert considered sufficient facts in rendering their opinions in this case?

A. Yes, it is.

Q. Can you tell me what this document is?

A. This document, I believe, is a note made by Dr. Hubbuch after a meeting with G's mother.

Q. And can you tell from this document when that meeting was with G's mother?

A. The date on it is 7/23/14.

Q. Is it your understanding that this is the first time that G's mother met Dr. Hubbuch?

A. It is.

Q. Can you tell from these notes whether G was present at this meeting?

A. There's no evidence that G was present at that meeting.

Q. From looking at this note, did Dr. Hubbuch obtain any history information regarding G from Mrs. [redacted]?

A. It all appears to have come from Mrs. [redacted].

Q. Now, on the second page of the document do you see the list of dates on the top of the page?

A. I do.

Q. And does this appear to be a list of dates with symptoms?

A. Yes, it is.

Q. And do you know where Dr. Hubbuch obtained this information?

A. I believe this information came from G's mother.
Q. Have you ever seen any medical records of G to support the reports that are contained in this document that indicate G supposedly had these symptoms on these particular dates?
A. I have not.
Q. Did you see any evidence that Dr. Hubbuch asked for any medical records to support these claims of symptoms?
A. Dr. Hubbuch did not seem to have requested any previous medical records.
Q. Do you think that Dr. Hubbuch should have asked for medical records to support these claims of symptoms?
A. That's a standard practice in -- that's a standard occurrence in medical practice when you have somebody coming for another opinion, the good clinical practice is to obtain old medical records and find out what other clinicians said and thought.
Q. Is there any indication that Dr. Hubbuch did so?
A. No, there's not.
Q. On the third page of the document towards the bottom of the page, do you see the section that talks about patterns suggest sensitivity to EMF with WI-FI?
A. Yes, I see that.
Q. And it also mentions the school; correct?
A. That is correct.
Q. Now, did you see any indication in this medical record of

Dr. Hubbuch's showing that Dr. Hubbuch considered any other causes at this time other than sensitivity to EMF with the school's WI-FI?

A. I do not.

Q. Is there any indication in this medical record that Dr. Hubbuch ordered any tests?

A. There is not.

Q. Is there any indication that Dr. Hubbuch attempted to rule out any other causes for G's symptoms?

A. There is not.

Q. Do you have a concern at all with Dr. Hubbuch's failure to consider other causes or order any tests at this time?

A. Yes. Especially in light of the absence of review of previous medical records. You'd like to make sure that you eliminate medical causes of a headache first before going to far less threatening causes of headache.

Q. Have you seen any records of Dr. Hubbuch that indicate Dr. Hubbuch diagnosed G with a certain condition after meeting with Mrs. [redacted] on July 23rd, 2014?

A. I'm sorry. Say that again.

Q. Sure. Have you seen any documents that indicate that Dr. Hubbuch made a diagnosis of G after meeting with Mrs. [redacted] on July 23rd, 2014?

A. Yes, she did.

Q. Can you turn for me to Tab 2 of the exhibit, please.

Are you at Tab 2, Doctor?

A. Yes, I am.

Q. Is this one of the documents that you reviewed to determine whether Dr. Hubbuch and Dr. Herbert considered sufficient facts in rendering their opinions in this case?

A. Yes, it is.

Q. And can you tell me what this document is?

A. This appears to be a billing sheet for Jeanne T. Hubbuch's medical practice.

Q. And I see a date at the top of the document.

Do you see that?

A. Yes.

Q. Can you tell me what that date is?

A. It's the same as the last document we looked at, 7/23/14.

Q. That would be the same date as the meeting between Dr. Hubbuch and Dr. Herbert?

A. That's correct.

Q. Now, do you see any diagnosis on this document?

A. Yes, I see two.

Q. Can you tell me what those diagnoses are?

A. One is headache, and the other is EMF sensitivity.

Q. Now, is headache the section that I'm circling right now?

A. Yes, it is.

Q. And that would be listed as number 52 on this document?

A. It's actually 964.2, but it's the fifty --

Q. The reference number?
A. The reference number is 52. Sorry.
Q. Now, further down on the document is there another diagnosis?
A. There is.
Q. And what is that?
A. EMF sensitivity.
Q. And that is -- is that the area that I'm presently circling?
A. Yes, it is.
Q. What is your understanding of what EMF sensitivity is?
A. Some individuals claim to have sensitivity to electromagnetic fields, which adversely affect themselves.
Q. In looking at this particular medical record, is it your understanding that Dr. Hubbuch made a diagnosis of G of EMF sensitivity after her meeting with Mrs. [redacted] in July of 2014?
A. On July 23rd, yes.
Q. Have you seen any documents that indicate that Dr. Hubbuch linked that EMF sensitivity to Fay School's WI-FI?
A. No, she did not.
Q. She didn't link the two?
A. Oh, yes. I'm sorry. She did link the two, but -- just a second.
Q. Can you turn for me, please, to Tab 3 of Exhibit 1.
A. Yes, she did link the two. Sorry.

Which tab?

Q. Tab 3.

A. Okay.

Q. Is this one of the documents that you reviewed to determine whether Dr. Hubbuch and Dr. Herbert considered sufficient facts in rendering their opinions?

A. Yes, it is.

Q. Now, this appears to be a letter from Dr. Hubbuch on August 7th, 2014; correct?

A. That's correct.

Q. So this would be shortly after Dr. Hubbuch met with Mrs. [redacted]?

A. That's correct.

Q. Do you know if this letter was sent to Fay School?

A. I believe that it was.

Q. Can you turn for me to the sec -- oh, sorry -- the third page of the exhibit, but the second page of the letter.

A. Oops. Okay.

Q. Do you see the last paragraph on the page?

A. I do.

Q. Can you read for me the first sentence of the last paragraph.

A. "It is my opinion based on medical training and experience, especially my training in environmental medicine, that G is being adversely affected by prolonged exposure to

WI-FI at school."

Q. Is this the document that you reviewed that indicated that Dr. Hubbuch connected G's EMF sensitivity to the school's WI-FI?

A. Yes, it is.

Q. Is it your understanding that Dr. Hubbuch made the diagnosis -- strike that.

Is it your understanding that Dr. Hubbuch first made her diagnosis that G was suffering from EMF sensitivity to the school's WI-FI in July or August of 2014?

A. That is correct.

Q. Do you believe that that diagnosis was based on sufficient facts or data?

A. I do not.

Q. Why not?

A. To establish that it's related to a school, it's related to a particular source of exposure, requires a good environmental history, which includes not only that from family members, but in the case of like a 12-year-old, who's capable of providing a history, from the child himself. It also requires a physical examination and other features, too, depending on what's found.

A constellation of symptoms are associated with a specific location. We in the Pediatric Environmental Health Center would go visit that location once we completed our

in-clinic assessment.

So there was an inadequate degree of effort applied to this.

Q. Did Dr. Hubbuch evaluate G at all before she made this diagnosis?

A. She did not.

Q. Is that problematic?

A. Very.

Q. Why?

A. Standard clinical practice is to evaluate a patient before assigning a diagnosis to that patient.

Q. In the records that we just looked at Tab 1, 2 and 3 of Defendants' Exhibit 1, did you see any indication that Dr. Hubbuch considered any other cause of George's -- excuse me -- G's symptoms prior to diagnosing him with EMF sensitivity from Fay School's WI-FI?

A. I did not.

Q. Did you look at other records to determine whether Dr. Hubbuch had relied upon sufficient facts in first making her diagnosis in July and August of 2014?

A. I'm sorry. Could you say that again.

Q. Sure. Did you look at any other medical records of G, other than the ones we just looked at, to determine whether Dr. Hubbuch relied upon sufficient facts in making her diagnosis?

A. Yes, I did.
Q. Can you turn for me, please, to Tab 4 of Defendants' Exhibit 1.
Is Tab 4 of Defendants' Exhibit 1 one of the documents that you reviewed to determine whether Dr. Hubbuch and Dr. Herbert considered sufficient facts in rendering their opinions in this case?
A. Yes, it is.
Q. Now, I see on the top of the document there's an encounter date of May 20th, 2014.
Do you see that?
A. I do.
Q. And I see a doctor on the top named Dr. Marvin Ostrovsky.
Do you see that?
A. Yes.
Q. Do you know who Dr. Marvin Ostrovsky is?
A. I believe he was the primary care pediatrician for G.
Q. Now, in the section under call documentation filed by Marvin Ostrovsky, I see an indication that mother expressed concerns that WI-FI may be the cause of his symptoms in school as they are not present at home.
Do you see that?
A. I see that.
Q. Have you seen any records of G where this concern about WI-FI -- strike that. Let me start over.

Is this the first medical record of G where the issue of G's symptoms possibly being related to WI-FI comes up?

A. It's the first one I'm aware of.

Q. And this would be about two months before Mrs. [redacted] met with Dr. Hubbuch; correct?

A. That's correct.

Q. Now, can you tell me what Dr. Ostrovsky wrote with respect to whether he believed WI-FI was the cause of G's symptoms?

And I'm looking at that same paragraph that we were just looking at that I've pointed to on the screen where he says, "I told mom."

Do you see that?

A. Yes, I do.

Q. Can you tell me what he record -- what Dr. Ostrovsky recorded in the record?

A. He said, "I told Mom I would record this issue but at this time I cannot support that this is the cause of some of his -- some of his stomach chest issues."

Q. Did Dr. Hubbuch and Dr. Herbert -- excuse me. Strike that.

Did Dr. Hubbuch consider this fact in rendering her diagnosis a few months later?

A. She did not.

Q. Do you believe that she should have considered this fact?

A. I believe so.

Q. Why?
A. Because it demonstrates the child has already been seen by another clinician, and there's a difference of opinion which has arisen.
Q. Do you know if Dr. Hubbuch reached out to talk to Dr. Ostrovsky?
A. There's no evidence that she did.
Q. Now, from this record, can you tell whether Dr. Ostrovsky evaluated G. [redacted] in May of 2014?
A. It appears that he did.
Q. So while Dr. Ostrovsky evaluated G, Dr. Hubbuch did not a few months later?
A. That is correct.
Q. Given that Dr. Hubbuch did not evaluate G at the time she first made her diagnosis, do you believe that she should have reached out to someone like Dr. Ostrovsky who had evaluated G?
A. Yes, she should have.
Q. Why?
A. If she's going to render a diagnosis, she needs to talk to somebody who has at least seen the patient. If she's going to provide an opinion she needs to talk to somebody who has at least done an examination.
Q. Is there any indication that Dr. Hubbuch did so?
A. There is none.
Q. Do you think her failure to do so renders her opinion

unreliable in this case?

A. Yes, it does.

Q. Can you turn for me please to Tab 5 of Defendants' Exhibit 1.

Is this one of the documents that you reviewed to determine whether Dr. Hubbuch considered sufficient facts in rendering her opinions in this case?

A. It is.

Q. Now, this appears to be a series of emails between Mrs. [redacted] and Dr. Hubbuch in June and July of 2014; correct?

A. Yes.

Q. Now, do these all appear to be before the meeting between Dr. Hubbuch and Dr. Herbert where -- excuse me -- between -- strike that.

Does this medical record that's contained at Tab 5 of Defendants' Exhibit 1 appear to be communications between Dr. Hubbuch and Mrs. [redacted] prior to the meeting between Dr. Hubbuch and Mrs. [redacted]?

THE COURT: So hold up for a minute.

MS. McKEAN: Sure.

THE COURT: Is -- I presume that Mrs. [redacted] is G's mom and is the woman who is seated between counsel?

MR. MARKHAM: Yes, your Honor. She's right now in the ladies' room.

THE COURT: Thank you.

MS. McKEAN: I apologize, your Honor.

THE COURT: No. No. I just -- I just -- just for the record, I -- I sort of figured it out, but I just made sure the record reflects that.

MS. McKEAN: And I think just so the record is clear, many of these records obviously refer to her as Mrs. [redacted] or Heidi.

THE COURT: Yeah.

MS. McKEAN: So if we're reading those, that's how she would be referred to in these documents.

BY MS. McKEAN:

Q. On the first email on the bottom of the page dated June 24th, 2014, do you see that?

A. Yes.

Q. Mrs. [redacted] is talking about symptoms that her son is suffering from; correct?

MR. MARKHAM: Your Honor, excuse me one second. She is referring to the mother as [redacted], and the documents say Ms. [redacted]. As of now there has been no motion like counsel said she would file to actually use the names of the mother and the father. I don't want to argue the point now, but obviously if you use the names of the mother and father, everybody is going to know that G stands for their son, and he has only got -- he has only got one son that starts with a G. Nobody else is in the courtroom now except people who already know

that. The other gentleman in the back is a representative of The Fay School, so he knows the name. I would just like to reserve the right later to have all this changed in the record or sealed at least for now until we sort out whether the parents can keep their designations in this case as mother and father to protect the identity of the minor G who's 12.

MS. McKEAN: And, your Honor, when I went back and actually looked at the filings in this case, it dawned on me that plaintiffs' counsel never moved to prevent or allow the use of pseudonyms in this case. Now, whether -- the court rules are clear that we need to be careful on using a minor's name. That's why we're trying to use G today. There was no such indication in the rules that the names of adults are not being used, and given that the plaintiff did not use to use pseudonyms in this case, we made the determination that we shouldn't be affirmatively moving --

THE COURT: To the extent that it is going to result in the revelation of the minor's name, just don't do it. I mean -- that's why I asked the question. I presume --

MS. McKEAN: Okay.

THE COURT: -- we're going to walk carefully here. It really doesn't make any difference to my analysis at this point in time how we refer to everybody as long as I know who they are. If we get in front of the jury, we may have to talk about that.

MS. McKEAN: Okay. Thank you, your Honor.

Q. Back to the bottom of this medical record that we have been looking at.

Do you see there's a reference from G's mother as to symptoms that G has been allegedly suffering from?

A. Yes.

Q. And specifically there's a reference to headaches, dizziness, ringing ears, chest pressure, nausea.

Do you see that?

A. Yes.

Q. Now, do you see the statement that G's mother makes where she states, "I have connected this to the blanket WI-FI in school?"

A. Yes.

Q. Did this statement concern you at all?

A. Potentially, yes.

Q. Why?

A. Well, because it suggests that there has been an association made without testing how far that association goes.

Q. Is there any indication that Dr. Hubbuch considered this fact?

A. No, there's not.

Q. Do you think she should have?

A. Yes.

Q. Why?

A. Because it's -- it's up to Dr. Hubbuch to be as objective as possible.

Q. Now, do you see Dr. Hubbuch's response on July 3rd, 2014?

A. Yes, I do.

Q. Now, she seems to indicate that something at school is bothering him since he is fine from there. Generally, the symptoms should appear every time he is exposed.

Do you see that line?

A. That's correct.

Q. Now, this statement was made by Dr. Hubbuch about a few weeks before she made the diagnosis of EMF sensitivity; correct?

A. That is correct.

Q. To your knowledge was -- were G's symptoms appearing every time he was exposed to Fay's WI-FI in July of 2014?

A. I don't believe he was.

Q. Was Dr. Hubbuch's diagnosis of G a few weeks later inconsistent with this statement?

A. It is inconsistent with it.

Q. Now, G's mother then responded to Dr. Hubbuch in the email above; correct?

A. Yes.

Q. Now, G's mother -- do you see the line where she states, "I will need a diagnosis of this for school to accommodate as they are utilizing five gigahertz WI-FI."

Do you see that line?

A. Yes, I do.

Q. Okay. Did this raise any concerns for you?

A. Yes.

Q. Why?

A. She's shopping for a diagnosis.

Q. Is there any indication that Dr. Hubbuch considered that fact?

A. There is none.

Q. Should she have?

A. Yes, she should.

Q. Why?

A. Because in an environmental and toxicologic evaluation, one of the first things we were taught was identify the cause somebody is seeking an evaluation. Is it because it's actually about health, or is it about driving an agenda.

Q. Does this statement seem to indicate that G's mother may have been driving an agenda, as opposed to seeking a valid diagnosis?

A. It suggests that.

Q. Is there any indication in Dr. Hubbuch's notes that she considered that fact?

A. There's not.

Q. Now, Dr. Hubbuch then responds to G's mother; correct?

A. Yes.

Q. And specifically Dr. Hubbuch says there's no lab tests. There are no lab tests; right?
A. That's correct.
Q. And can you tell me what she states thereafter?
A. "If he goes where WI-FI is on at home or other locations and gets similar symptoms then I could make the diagnosis that that is causing his symptoms."
Q. Is that statement inconsistent at all with the diagnosis that Dr. Hubbuch made a few weeks after making this statement?
A. It is inconsistent.
Q. Why?
A. Because the data presented was that he had symptoms at school, but it seems no investigation to the extent he had symptoms away from WI-FI -- sorry -- in WI-FI away from school.
Q. In your expert opinion, was Dr. Hubbuch's initial diagnosis of EMF sensitivity for G supported by sufficient facts?
A. It is not.
Q. And is that because she failed to consider the facts that we've just discussed here?
A. Yes, it is.
Q. Now, one of the reasons you raised concerns about Dr. Hubbuch's initial diagnosis is that she never evaluated G; correct?
A. At the initial visit, she obtained neither a history nor

obtained a physical exam.

Q. But she did eventually do that; correct?

A. Eventually, yes.

Q. Can you turn to Tab 6 of Defendants' Exhibit 1 for me, please.

Is this one of the documents you reviewed to determine whether Dr. Hubbuch considered sufficient facts in rendering her opinion?

A. It is.

Q. Now, this is dated February 3rd, 2015; is that right?

A. That is correct.

Q. So this would be about six months after Dr. Hubbuch first diagnosed G with EMF sensitivity?

A. That's correct.

Q. Did you see any indication in the medical records of G that Dr. Hubbuch evaluated G during that six month time frame between the time she first diagnosed him and the date of these notes?

A. I see no evidence that she saw G in the intervening period.

Q. From your review of the records does it appear that Dr. Hubbuch first evaluated G on February 3rd, 2015?

A. That is correct.

Q. And do you know what these notes are?

A. These are, I believe, her office notes from that -- from

that visit.

Q. Now, can you tell from these office notes whether anyone else was present at the evaluation of G other than G and Dr. Hubbuch?

A. I believe his mother was there.

Q. Is there any indication that Dr. Hubbuch met with G separately at this evaluation?

A. There is not.

Q. Do you have any concerns with that?

A. Yes.

Q. What are your concerns?

A. In any pediatric evaluation, not just a pediatric environmental toxicology evaluation, it's important to separate parents from children to get a different -- to get a separate history from the child. And you do that for a reason that depends on the developmental age on the child.

In a child who is preadolescent, such as an 11, 12-year-old, children may simply wish to provide the history that they want the parents -- that they believe the parents want to hear.

In an adolescent, you know, depending on the age and maturity of the kid, but sometimes it's between 12 and 17, parents may not get any history at all from adolescents because they simply -- adolescents are simply uncommunicative. So it's important to get the kid away from the parents, away from

caretakers to get a history. That is such a standard part of a pediatric encounter that is taught as a basic principle in medical school.

Q. And would that be true with respect to a boy of G's age that is 12 years of age at the time of this evaluation with Dr. Hubbuch?

A. Yes, that's true.

Q. And you think he was old enough to be evaluated separately?

A. Yes.

Q. Do you think he should have been evaluated separately by Dr. Hubbuch?

A. Yes.

Q. Do you see any indication in her records that she ever did so?

A. She did not.

Q. Can you turn for me to the third page of Tab 6 of Defendants' Exhibit 1.

MR. MARKHAM: Is there a Bates stamp?

MS. McKEAN: It's Bates stamped JTH0016.

MR. MARKHAM: 0016 or 6?

MS. McKEAN: 006. I'm sorry.

BY MS. McKEAN:

Q. Do you see the last paragraph on this page?

A. Yes.

Q. And specifically the paragraph that states, "none during summer and much less often at home on -- or holidays."

Do you see that?

A. Yes.

Q. Okay. At the end Dr. Hubbuch writes, "but if something in school was cause, I'd expect it to persist entire day at school, and it does not."

Do you see that?

A. I do.

Q. Did you have any concerns with this statement by Dr. Hubbuch?

A. I do.

Q. Why?

A. Because she's presented a contradictory diagnosis in absence of data to support it.

Q. Was there any indication at this point that G was having symptoms the entire day of school?

A. There is not.

Q. Was there any indication that G ever had symptoms the entire day at school?

A. I'm not aware that he did.

Q. Now, her statement about if something -- if it was something at school, she'd expect it to persist the entire day.

Do you agree with that statement?

A. Once again, it depends. I mean I -- but it should be,

yes.
Q. Did Dr. Hubbuch in rendering her opinion in this case consider sufficiently the fact that G's symptoms did not persist the entire day of school?
A. I'm sorry. Say that again.
Q. Sure. In rendering her opinion in this case, did Dr. Hubbuch sufficiently consider the fact that she wrote in her own notes that G's symptoms did not persist the entire day of school?
A. It appears that she ignored her own notes.
Q. Do you know if Dr. Hubbuch -- do you know if Dr. Hubbuch made a diagnosis or confirmed her earlier diagnosis after evaluating G in February of 2014?
A. I believe she did.
Q. Can you turn for me to Tab 7 of Defendants' Exhibit 1.
THE COURT: Just before you do that. What was the date on the notes on 6, please?
MS. McKEAN: February 3rd, 2015.
THE COURT: Okay.
Q. Is this one of the documents that you reviewed to determine whether Dr. Hubbuch had sufficient facts in rendering her opinions in this case?
A. Yes, it is.
Q. Now, this appears to be a letter from Dr. Hubbuch; is that correct?

A. Yes, it's on her letterhead.
Q. Okay. And it's dated March 31st, 2015?
A. Yes, it is.
Q. So that would be shortly after she saw G [redacted] in February; right?
A. Yes.
Q. Did she make a diagnosis in this letter?
A. Yes, she did.
Q. Can you tell me what that diagnosis is?
A. It says, "It is my opinion that G has electromagnetic field (EMF hypersensitivity) and should be accommodated in a reduced environment."
Q. Can you turn to me -- for me to Tab 8 of Defendants' Exhibit 1.

Is this one of the documents you reviewed in looking at whether Dr. Hubbuch considered sufficient facts in rendering her opinion?
A. Yes, it is.
Q. This also appears to be another letter from Dr. Hubbuch; correct?
A. Yes.
Q. And this is a few weeks after the letter we just looked at; right?
A. That is correct.
Q. And, in fact, it's dated April 14th, 2015?

A. Yes.
Q. Did Dr. Hubbuch make any different diagnosis in this letter?
A. She did.
Q. She made a different diagnosis?
A. Well, she -- she said he has been -- "G has been diagnosed with electromagnetic hypersensitivity." The ICD-10 code is T78.8, idiopathic environmental intolerance.
Q. Now, is this the first time -- strike that.
Can you tell me what ICD-10 code is.
A. Yes, it's got a longer name, but physicians just use the international classification of a disease, ICD. It started like a hundred, 150 years ago, but it has been through nine, now ten iterations. It is the code of diagnoses of medical conditions that exist. So with IC-9 there were about 4,000 medical conditions. Now, there are 70, 80,000 different diagnosis codes that can be applied, and they include such things as bitten by orca, burned by snow skis on fire, burned by water skies on fire, and the like.
Q. Do the ICD-10 codes include electromagnetic hypersensitivity?
A. No, they specifically do not. The request is that anyone who is potentially considered that diag -- with that diagnosis receive the psychosomatic code of idiopathic. We don't know the cause, environment, the world around us, intolerance. I

don't like where I am. So intolerance doesn't say that the environment is bad. It says, I'm intolerant of the environment no matter how benign that environment might be. I'm sitting here. I'm okay with everybody out there that I can face, but I might be intolerant of all these folks back here even though they're not actually doing anything to bother me.

Q. Why do you say it's a psychosomatic diagnosis?

A. Because it's treated with cognitive behavioral therapy.

Q. Is it based at all on the patient's belief, as opposed to objective medical findings?

A. It is.

Q. In what way?

A. In those cases there's an absence of objective medical findings, which can be independently confirmed by an objective examiner.

Q. Is this the first time that Dr. Hubbuch included an ICD-10 code on any of her diagnoses?

A. Yes, it is.

Q. Now, when you looked at the diagnosis that Dr. Hubbuch made at this time period, that is, in early 2015, did you go back and look at whether or not she had considered sufficient facts or data in making that diagnosis?

A. I did.

Q. Can you turn for me, please, to Tab 9 of Defendants' Exhibit 1.

Is this one of the documents that you reviewed to determine whether Dr. Hubbuch considered sufficient facts in rendering her diagnosis and in her opinions in this case?

A. Yes, it is.

Q. Now, I see in the top there's an encounter date of November 11th, 2014.

Do you see that?

A. I do.

Q. Okay. Do you know if this is a medical record related to something that happened on November 11th, 2014?

A. Yes, it is.

Q. Now, do you see there's an indication of -- that this is related to a telephone call?

A. Yes, it is.

Q. Now, I see a Dr. Matthew Waugh on the top.

Do you see that?

A. Yes.

Q. Do you know who Dr. Matthew Waugh is?

A. I know of him. I believe he's one of the primary care pediatricians at Southborough Pediatrics.

Q. Do you know if Dr. Ostrovsky was still G's pediatrician in November of 2014?

A. I believe that Dr. Ostrovsky had retired and Dr. Waugh had taken over clinical care.

Q. Is it your understanding that Dr. Waugh was G's

pediatrician in November of 2014?
A. I just said that very clumsily, but, yes, he was the PCP.
Q. Okay. Now, this indicates that mother -- and it says, "convenience." Do you see that? "Mother is convenience," that this is from industrial strength WI-FI the school installed in 2013." Do you see that?
A. I do.
Q. Now, do you see it mentions that she has seen a specialist 8/7/14, in environmental health/family medicine?
A. I do see that.
Q. Who believes it to be EMF; do you see that?
A. Yes.
Q. Do you -- is there any indication in this record that mother told Dr. Waugh that G was never evaluated by Dr. Hubbuch before she made her diagnosis?
A. It does not say that.
Q. Now, do you see it indicates mother was not at all interested in considering this could be anxiety or school phobia?
Do you see that?
A. I see that.
Q. And then further down do you see it says, "Mother was not at all interested in seeing a psychologist?"
A. I see that.
Q. Was it significant to you at all that mother indicated to

Dr. Waugh that she wasn't interested in considering these other factors?

A. Yes, it is.

Q. Did you see any indication that Dr. Hubbuch played any or placed any significance on that -- those facts?

A. She did not appear to.

Q. Do you think she should have?

A. Yes.

Q. Why?

A. Because in an environmental evaluation sometimes you have to use a therapeutic trial to see if there's benefit. If you do a therapeutic trial and there is an improvement, it tells you something about what the diagnosis actually is. By not doing a therapeutic trial of seeing a psychologist and pursuing potentially cognitive behavioral or other psychological interventions, it eliminates an opportunity to further refine the differential diagnosis in a correct way.

Q. Did you have any concern based on these statements as to whether G's mother was more focused on one diagnosis than another diagnosis?

A. It doesn't say outright anything, but there seems to be -- there seems to be a --

MR. MARKHAM: Objection, your Honor. This is just his speculating about the mother.

THE COURT: Sustained. I think we're going to use

this as an opportunity for our first break this morning so --

MS. McKEAN: Absolutely, your Honor.

THE COURT: -- see you all in about 20 minutes.

MS. McKEAN: Sounds good. Thank you.

THE CLERK: All rise.

(There was a short recess taken.)

THE CLERK: All rise.

Please be seated.

BY MS. McKEAN:

Q. Dr. Boyer, before the break we were looking at Tab 9 of Exhibit 1, and specifically we were looking at the fact that mother had told Dr. Waugh that she was not at all interested in considering this could be anxiety, school phobia, or seeing a psychologist; do you recall that?

A. I do.

Q. Is that something you would have considered had you made a diagnosis in this case?

A. I would have -- I would have considered that, yes.

Q. Why?

A. Because psychosocial causes of headache are on the differential diagnosis, and it demonstrates that Dr. Hubbuch did not adequately fill out the differential diagnosis to the extent needed.

Q. And from your review of Dr. Hubbuch's records is there any indication that she considered those facts?

A. There's none.
Q. Dr. Hubbuch, can you turn to Tab 10 of Exhibit 1, please.
A. Doctor who?
Q. I'm sorry. Dr. Boyer.
A. Thank you.
Q. I apologize. Dr. Boyer, are you at Tab 10 of Exhibit 1?
A. Yes, I am.
Q. I see this document has a date on the top of November 18th, 2014.

Do you see that?

A. I do.
Q. Now, a few moments ago we reviewed a document of Dr. Waugh that was about a phone call between Dr. Waugh and mother; correct?
A. Yes.
Q. Do you know if Dr. Waugh subsequently evaluated G after mother made that phone call?
A. I believe so.
Q. Is this the record of that evaluation?
A. Yes, it is.
Q. Is this one of the documents that you reviewed in determining whether or not Dr. Hubbuch relied on sufficient facts or data in reaching her opinions?
A. Yes, it is.
Q. Now, on the second page of this document do you see where

it says, "Assessment/Plan?"
A. Yes.
Q. Can you tell me what Dr. Waugh's assessment was after evaluating G in November of 2014?
A. Yes. It says, "headache." And then on the next line, "I had already discussed with mother that there is no evidence at this time to support WI-FI as a cause."
Q. Any indication that doctor -- Dr. Hubbuch considered this fact in rendering her opinion in this case?
A. There is not.
Q. Do you think she should have?
A. She should have.
Q. Why?
A. Because once again, it's important to review the medical records to determine what workup has been done before and the thought processes of other clinicians who had been seeing the patient previously.
Q. Is there any indication in any of Dr. Hubbuch's records that she ever spoke with Dr. Waugh about his thoughts about G?
A. There's not.
Q. Do you think she should have spoken with Dr. Waugh?
A. Yes, she should have.
Q. Why?
A. Well, once again, would you like to -- if there's information contained in the medical record, which is often

incomplete, and you would like to at least get an impression which can be easier conveyed by speaking.

Q. Now, Dr. Waugh referred G to neurology; is that correct?

A. That's correct.

Q. And have you reviewed the records regarding that neurological visit?

A. I have.

Q. Can you turn for me to Tab 11 of Exhibit 1.

Are you there?

A. Yeah.

Q. Is this the medical record of that neurological visit?

A. It is.

Q. Can you tell from the record the date of the visit?

A. The service date is 12/9/2014.

Q. Can you tell the name of the doctor that performed the neurological evaluation?

A. Yes. It's Pradeep Dinakar.

Q. Do you know where Dr. Dinakar's office is located?

A. It's located at Children's Hospital Boston. Sorry. Boston Children's Hospital.

Q. That's located in Boston?

A. Yes, it is.

Q. Can you turn for me to the last page of the record.

A. Okay.

Q. Do you see there's a section entitled "plan?"

A. Yes.
Q. First of all, on the top there's a section entitled "assessment."
Do you see that?
A. Yes.
Q. Is there any indication that Dr. Dinakar believed that G's symptoms were related to WI-FI at all?
A. There's none.
Q. Now, can you tell me what recommendation does Dr. Dinakar make in -- under plan where it says C, the letter C that is?
A. Under C, it says, "Psychology: Recommend psychology pain coping modalities if patient has increased stress socially and the headaches continue to be refractory."
Q. Is there any indication that G's parents followed through with this recommendation?
A. I'm not aware that they did.
Q. Do you think they should have?
A. Yes.
Q. Is there any indication that Dr. Hubbuch considered the fact that G's parents did not follow through with this recommendation?
A. She should have, yes.
Q. Is there any indication that she did?
A. There is not, no.
Q. Okay. Should she have considered this fact?

A. Yes, she should have.
Q. Why should she have considered this fact?
A. Because once again it's a therapeutic modality and if it works then you have information about what the diagnosis is; if it doesn't work, then you have information about what the diagnosis is.
Q. Now, can you tell me what the recommendation was under the letter D under plan on this page?
A. Maintain a headache -- excuse me -- "maintain a headache diary."
Q. Now, does this refer at all to the patient maintaining a headache diary?
A. My experience has been that yes, it does refer to the patient maintaining a headache diary.
Q. Have you seen any indication in this case that G [redacted] -- excuse me -- that G maintained a headache diary in this case?
A. I do not.
Q. Have you ever seen anything written by the child related to a headache diary?
A. I'm not aware that one exists.
Q. Have you seen a typed document that was typed up by one of the parents of G?
A. I have, yes.
Q. Is that equivalent to the headache diary that you would typically recommend in this type of case?

A. It's not.
Q. Why not?
A. Well, the -- the purpose of a -- of a headache diary is to capture the richest data surrounding the events themselves. So if there's a headache then you can record what happened immediately before, immediately after, where you were, what events were, and that's important in trying to elucidate a specific cause of headache, a specific trigger of headache.
Q. Is it important that the symptoms in the headache diary are recorded at the time the patient is experiencing those symptoms?
A. Yes, by recording it at the time it occurs you eliminate -- you eliminate recall bias and have a more accurate history of what actually occurred.
Q. Now, in this case, G stated his symptoms were happening mostly at school; correct?
A. That's correct.
Q. And to your knowledge were his parents present at school when he was experiencing those symptoms?
A. I am not aware that they were.
Q. Is there any indication that the parents were recording his symptoms at the same time that they were happening to G?
A. I don't believe that happened.
Q. Is there any indication in Dr. Hubbuch's records that she considered the lack of a headache diary by the patient?

A. There is not.
Q. Did she ever recommend that G keep a headache diary to your knowledge?
A. I don't believe she did.
Q. Do you think she should have?
A. Yes, she should have.
Q. Can -- did Dr. Dinakar recommend any tests after his neurological evaluation of G?
A. He recommended a brain and C spine MRI.
Q. To your knowledge did that take place?
A. It did.
Q. Have you seen the records of that MRI?
A. I have.
Q. Can you turn for me to Tab 12 of Exhibit 1.

Can you tell me what this is?

A. Excuse me. This is a final report of an MRI of the brain without contrast.
Q. Can you tell from this document the date of the MRI?
A. The encounter info at the top says 12/19/2014.
Q. So that would be December 19th, 2014?
A. That's correct.
Q. And is it your understanding that that's the date G had an MRI?
A. Yes, it says on the next page it's performed on 12/19/2014.

Q. Were there any significant findings from the MRI?
A. Actually, no. It was found to be a normal exam of the brain with a negative exam of the cervical spine.
Q. Now, Dr. Hubbuch did consider this negative finding; correct?
A. She did.
Q. As she should have; right?
A. Yes.
Q. Can you turn for me to Tab 13 of Exhibit 1.

Is this one of the documents that you reviewed to determine whether Dr. Hubbuch considered sufficient facts in rendering her opinions in this case?
A. Yes, it is.
Q. Now, I see an encounter date of January 7th, 2015.

Do you see that?
A. Yes.
Q. So this would have been a few weeks after the MRI?
A. Yes.
Q. And do you see it indicates call documentation?
A. Yes, I do.
Q. And then there's a mention of Dr. Waugh?
A. Yes, the primary care physician.
Q. G's primary care's physician?
A. I believe so at this point, yes.
Q. Do you have an understanding of what this document is?

A. This is -- this is the documentation filed by Matthew Waugh, which records conversations that he had with G's mother.
Q. And during these conversations did G's mother ask Dr. Waugh to do anything with respect to G's medical records?
A. She requested that the medical records be changed.
Q. And can you show me in this document where doctor -- excuse me -- G's mother asked Dr. Waugh to change the medical records?
A. Yes. About 75 percent of the way down it says, "She also asked I remove the above line about evidence to support WI-FI as a cause. While this is a legal document I will not alter it. I can addend that I have not found any credible evidence in my research, although I'm not an expert in this field."
Q. So based on your rereading of this document it would appear that G's mother asked Dr. Waugh to remove the line that we looked at a few moments ago about him not having evidence to support WI-FI as a cause?
A. That's what I understand.
Q. Was there any requests with respect to nosebleeds?
A. There is.
Q. And is that above where we were just looking at?
A. Yes, it is.
Q. And can you tell me what G's mother asked with respect to nosebleeds?
A. She asked that the records state that, quote,

the -- sorry, quote, "mucosa is not dry and it is not found to be a cause of the nosebleeds."

Q. Did you have any concern with that request?

A. Yes, I do.

Q. Why?

A. Because nosebleeds in kids are most common in the summer. The humidity drops, the mucosa thins, and it becomes dry. Even wiping the nose, you know, just rubbing the finger across the nostrils is sufficient to cause a nosebleed because the mucosa is thinned and dried. What she's asking is that the physical exam not reflect what appears to have been found when Dr. Waugh examined G.

Q. Now, when did those nosebleeds typically happen with respect to mucosa?

A. The incidents of nosebleeds goes up in wintertime.

Q. Okay. A few moments ago you said the summer?

A. Okay, I apologize.

Q. So it would be in the wintertime?

A. I'm thinking summer now. They're more prevalent -- they're more common in the wintertime when the temperature and humidity drop.

Q. And did Dr. Waugh agree to change his records to reflect that mucosa is not found to be a cause of G's nosebleeds?

A. I don't believe that he did.

Q. Did he agree to remove his line with respect to WI-FI not

being a supportable cause?
A. He did not.
Q. Did he alter it slightly?
A. Yes.
Q. What did he agree to put in the records?
A. Well, he says, I can addend that I have not found any credible evidence in my research, although I'm not an expert in the field."
Q. Did you find any indication of Dr. Hubbuch's records that she considered in rendering her opinion the fact that G's mother asked Dr. Waugh to make some changes to G's medical records?
MR. MARKHAM: Objection. It doesn't say "changes." It says, "additions."
MS. McKEAN: I believe he has testified, your Honor, that his -- his understanding of this document is mother was asking changes to be made to the medical records.
THE COURT: Repeat the question, please.
MS. McKEAN: Sure.
BY MS. McKEAN:
Q. Let me ask you this, Doctor. Do you have an understanding as to what in general mother was asking Dr. Waugh -- strike that.
Do you have -- after reviewing this record, what did this document say to you with respect to what mother was asking

Dr. Waugh to do?

MR. MARKHAM: Objection. That's speculation.

THE COURT: Sustained.

BY MS. McKEAN:

Q. If you had conducted a diagnosis of G in this case, would you have considered the facts contained in this particular record?

A. Yes, I would have.

Q. Why?

A. Because it once again demonstrates that there may be a difference between search for a cause for a medical condition versus driving an agenda.

Q. Now, there's no indication in the original record by Dr. Waugh about nosebleeds; correct?

A. I don't believe so.

Q. And while he substantively added a mention about nosebleeds, he refused to state what G's mother asked him to state; correct?

A. That is correct.

Q. Did you have concerns with the fact that mother was even asking Dr. Waugh to do that?

MR. MARKHAM: Objection, your Honor.

THE COURT: Overruled. You may answer that.

A. I did.

BY MS. McKEAN:

Q. Is there any indication that Dr. Hubbuch considered this request by mother to Dr. Waugh?
A. I'm not aware that she did.
Q. Do you think she should have considered that in making her diagnosis?
A. Yes.
Q. Why?
A. Because once again it supports -- it helped provide clarity to the clinical question is an interest in health present versus an interest in an agenda.
Q. When you are diagnosing a patient do you typically look for -- do you typically ask questions about the motivations of the patient?
A. In the Pediatric Environmental Health Clinic, we had an actual form, different from the intake form, but it was a form that we used, which had those questions specifically delineated so that we would not forget to ask them.
Q. Is there any indication in any of Dr. Hubbuch's records that she ever considered the motivation of G's parents in this case?
A. There's -- I'm not aware that she did.
Q. Do you think she should have considered that factor?
A. I think so.
Q. And is that a factor that you always consider in making a diagnosis of a patient?

A. Yes.
Q. Now, a few moments ago we looked at Tab 6, which are the notes that Dr. Hubbuch wrote after evaluating G in February of 2015.
Do you remember that?
A. Just one second. I'm not there yet.
MR. MARKHAM: Tab what?
MS. McKEAN: Tab 6.
THE WITNESS: Okay.
BY MS. McKEAN:
Q. One of the pages we didn't look at is the last page. Can you turn to the last page of Tab 6 of Exhibit 1 for me, please.
A. Yes.
Q. Now, I know the writing is not the best, but can you discern what the date of the notes on the bottom two-thirds of the last page of this document are or is?
A. I'm sorry.
Q. What's the date?
A. It appears to be 2/15/15.
Q. And does this appear to relate to a discussion between Dr. Hubbuch and G's mother?
A. Yes, it does.
Q. Did you review these -- this document before today?
A. I did.
Q. Can you tell me what your understanding after reading this

document was of the information conveyed by mother to Dr. Hubbuch on February 25th, 2015?

A. That the headaches appear to be getting worse.

Q. Now, we saw a few moments ago that Dr. Hubbuch saw G on February 3rd, would that be right?

It's on the first page of this document.

A. I believe -- I believe so.

Q. So this would be a few weeks after that?

A. A few days after, yes.

Q. A few weeks, February 25th?

A. Oh, is it the 25th. I can't -- I can't read it on either document so...

Q. Okay. If something happened in between the first appointment and a conversation between mother and Dr. Hubbuch where mother increased -- stated the symptoms were increasing, do you think it would have been important for Dr. Hubbuch to consider that?

A. Yes.

Q. In other words, if there was an injury in between those two dates would that be important for Dr. Hubbuch to consider?

A. It would be, yes.

Q. Can you turn for me, please, to Tab 14.

Is this a document that you reviewed to determine whether Dr. Hubbuch considered sufficient facts in rendering her opinion in this case?

A. Yes, it is.
Q. And can you tell me what the date of this document is?
A. February 10th, 2015.
Q. And can you tell me the gist of -- strike that.
Is this from G[redacted] -- excuse me -- G's pediatrician?
A. It appears to be one of their forms, yes.
Q. And can you tell me what is reflected in this medical record?
A. This describes -- this describes a sledding accident the day before this visit where he hit his head on a tree.
Q. Is there any indication that Dr. Hubbuch even knew about the sledding accident when she made her diagnosis of G?
A. The medical record does not reflect that.
Q. Do you think that she should have considered this fact?
A. Yes, she should have.
Q. Why?
A. Because if you've got either a minor head injury, post concussive syndrome, headaches can be a prominent feature of -- can be a prominent feature of the condition.
Q. Is there any information reflected in Dr. Hubbuch's record that mother ever told Dr. Hubbuch about the sledding injury?
A. There's not.
Q. Now, after Dr. Hubbuch diagnosed G do you know if the school asked G to go see an independent medical doctor?

A. I believe they did.
Q. Can you turn for me please to Tab 15 of Exhibit 1.
Is this one of the documents that you reviewed in determining whether Dr. Hubbuch considered sufficient facts in rendering her opinions in this case?
A. Yes, it is.
Q. Can you tell me what this document is?
A. This is a letter generated by Alan Woolf from the Pediatric Environmental Health Center.
Q. Are you -- strike that.
Do you know who Dr. Woolf is?
A. Yes, I do.
Q. Are you familiar with his credentials?
A. I am.
Q. Do you know if he has any certifications with the ABMS?
A. He does.
Q. And what are those certifications?
A. He is board certified in pediatrics and medical toxicology.
Q. Do you think he was qualified to make a diagnosis of G?
A. I do.
Q. Can you tell the date of Dr. Woolf's evaluation of G?
A. Yeah, it records the service time is June 29th, 2015.
Q. Can you turn for me please to the page that is Bates stamped on the top Lebel 29.

Are you there?

A. Yes, I am.

Q. Do you see the first sentence under recommendations?

A. Yes.

Q. Can you read that sentence for me.

A. "At the parents' request, we did not interview G separately during this visit."

Q. Did this raise any concerns for you?

A. It did.

Q. Why?

A. Because as I demonstrated before, you have to separate out the child from the caretaker so that you can get an accurate and complete history.

Q. Can you tell if Dr. Woolf wanted to evaluate G separately from his parents?

A. Dr. Woolf wouldn't have written it if he hadn't wanted it to be done.

Q. And I apologize if I said Dr. Waugh instead of Dr. Woolf. So is it your understanding that Dr. Woolf asked to evaluate G separately from his parents?

A. I believe so. Based on -- based on my experience if he didn't -- if he wrote this in the medical record, he would have requested it.

Q. Now, is there any indication in Dr. Hubbuch's record that she considered in rendering her opinion that the parents did

not allow Dr. Woolf to talk to G separately?
A. There's not.
Q. Should she have considered that?
A. Yes.
Q. Do you see above where it says, "assessment?"
A. Yes.
Q. Can you read for me the first sentence of the second paragraph of the assessment.
A. "There is a lack of credible, rigorous and controlled, validated scientific data to support any relationship between electromagnetic radiation and G's myriad reported symptoms."
Q. Is there any indication that Dr. Hubbuch considered this fact in rendering her opinion in this case?
A. There is not.
Q. Should she have?
A. Yes.
Q. Why?
A. Because this is an expert in pediatric environmental health.
THE COURT: Doctor, what's tinnitus?
THE WITNESS: It's a ringing in the ears.
THE COURT: Thank you. Did I pronounce that right?
THE WITNESS: I have heard both tinnitus and tinnitus. If you're from Mississippi, it's tinnitus.
MS. McKEAN: You do better than I do, your Honor.

BY MS. McKEAN:

Q. Can you tell me what the second sentence in that paragraph that we were just reading states.

A. "Other environmental factors have been proposed as alternative or contributory to symptoms noted by patients such as G, including fluorescent light flicker, glare, poor ergonomics, poor indoor air quality (note, the school recently changed its HVAC system), school refusal syndrome, and/or stress in the school or home environment."

Q. And can you just tell me what the last sentence says as well?

A. "We do not support a diagnosis of an idiopathic environmental illness in this child."

Q. Is it fair to say that Dr. Woolf did not agree with Dr. Hubbuch?

A. That is correct.

Q. Now, Dr. Woolf lists these other environmental factors.

Is there any indication that Dr. Hubbuch considered any of those other environmental factors in rendering her opinion in this case?

A. There's not.

Q. Should she have?

A. Yes.

Q. Why?

A. Because it's part of the -- it's part of a thorough

differential diagnosis in evaluating an environmental cause of exposure.

Q. Now, other than that one time that Dr. Hubbuch saw G in February of 2015, did Dr. Hubbuch ever examine G again?

A. I don't believe she did.

Q. Now, we saw the -- the phone call between Dr. Hubbuch and mother where mother is reporting an increase of symptoms.

Was there any indication that Dr. Hubbuch saw G again after the report of an increase in symptoms?

A. There is none.

Q. In your opinion should she have done so to render an opinion in this case?

A. Yes.

Q. Why?

A. Because in a situation where you have a change or worsening of condition you want to see the patient again, perform the history, perform the physical exam, look at additional data that's available to determine whether or not your initial thought was correct and whether or not you need to modify your clinical approach.

Q. Now, after seeing Dr. Woolf, did G[redacted] go to see a Dr. Herbert?

A. I believe he did.

Q. And she is one of plaintiffs' proposed experts in this case; correct?

A. She is.
Q. Can you turn for me to Tab 16 of Defendants' Exhibit 1.
And specifically why don't we start at the second page of the exhibit, which is the first page of the letter.
Do you see that?
A. Yes, I do.
Q. Is this one of the documents you reviewed to determine whether or not plaintiffs' experts had considered sufficient facts in rendering their opinions?
A. Yes.
Q. Now, this appears to be a letter from Dr. Herbert, would that be correct?
A. That is correct.
Q. And can you tell me what the date of this letter is?
A. The date of this letter is September 12th, 2015.
Q. Do you know when Dr. Herbert saw G in comparison to the date of this letter?
A. I believe it was very soon before this, September 10th, I believe.
Q. Did, to your knowledge, Dr. Herbert evaluate G without the presence of his parents or -- yes -- strike that.
Did, to your knowledge, Dr. Herbert evaluate G without the presence of his parents?
A. I'm not aware that she did.
Q. Is it your understanding that the parents were in the room

the entire time of the evaluation of Dr. Herbert of G?
A. Yes.
Q. Did Dr. Herbert evaluate G more than one time?
A. I don't believe so.
Q. So it was just a simple -- the single visit on September 10th, 2015?
A. It was a single visit, yes.
Q. Now, what's your understanding of what this letter is?
A. This letter, it looks like a -- it just looks like a letter without a specific recipient generated by Martha Herbert.
Q. On the first page of the document, in the fourth paragraph.
THE COURT: What? I'm sorry. The first page?
MS. McKEAN: I'm sorry. The second page of the document. The first page of the letter. I apologize.
A. This one.
Q. The fourth paragraph. It starts with "based on the evidence."
Do you see that paragraph?
A. I do.
Q. Do you see any diagnosis that Dr. Herbert made in this paragraph?
A. Yes.
Q. And what did Dr. Hubbuch -- excuse me -- Dr. Herbert state

with respect to a diagnosis of G?
A. Dr. Herbert says, "I think it is entirely reasonable to diagnose G with electromagnetic hypersensitivity syndrome and to use the diagnostic code idiopathic environmental intolerance, ICD-10-T78.8, in lieu of a specific code for EHS.
Q. So is it fair to say she agreed with Dr. Hubbuch's diagnosis?
A. Yes.
Q. We just went through a number of facts and data that you stated you believe Dr. Hubbuch should have considered in making her opinion.
Do you recall that?
A. Yes.
Q. In making Doctor -- strike that.
Did Dr. Herbert consider any of those same facts and data in making her opinion?
A. I can't tell that she did.
Q. Is there any indication that she did?
A. Not from this document, no.
Q. Would her failure to consider those facts render her opinion unreliable?
A. Yes.
Q. And would that be for the same reasons we just discussed with respect to Dr. Hubbuch?
A. Yes, that's correct.

Q. Now, Dr. Herbert does reference a number of articles and studies in this letter; correct?
A. Yes, she does.
Q. And are these the same articles and studies that Dr. Herbert referenced in her expert report in this case?
A. I believe so.
Q. And you reviewed those articles and studies?
A. Yes. I haven't committed them to memory, but, yes, I have.
Q. Is there any support in any of the studies cited by Dr. Herbert to show that WI-FI can cause symptoms like G's?
A. There's no evidence that WI-FI can cause symptoms found in this patient.
Q. Is -- to your knowledge, is there any reliable study that shows symptoms like G's are caused by WI-FI?
A. There's none.
THE COURT: So is exposure to electromagnetic fields harmful?
THE WITNESS: It depends on the electromagnetic field. It depends on the field strength. Electromagnetic fields are a big place. They include radiation from, say, a nuclear bomb. They also include exposure to radio waves. What we know is that for years people have complained of problems associated with it, but when people have tried things such as provocation studies where they take an individual who says they're

sensitive or hypersensitive to these electromagnetic fields, put them in a room, don't tell the investigator and don't tell the patient when they're being exposed, or which patient is being exposed, so neither the investigator who's supervising the study knows what's going on, and the patient under study, the individual under study doesn't know what's going on, the preponderance of medical literature is that they cannot tell when they are exposed to electromagnetic force -- electromagnetic fields.

THE COURT: And can you dial up and dial down electromagnetic force?

THE WITNESS: You can. The issue, I believe, here is one of field strength, and while it sounds on the surface that going from 2.4 to 5.0 gigahertz might be horrific and bad for you, it actually is not done because you need more field strength. You don't need the ability to reach things to connect. You're actually doing it because 2.4 gigahertz interferes with the microwave in the kitchen. So there was enough -- there are so many WI-FI capable devices, which were functioning in the 2.4 gigahertz range that companies began to go up to 5.0 gigahertz. But here's the difficulty. When you go up in terms of frequency, you go down in terms of your ability to penetrate through things like walls.

So in my house, for example, we had the router in one corner of the house, my bedrooms in the far corner. You could

barely get WI-FI up in the bedroom in the same house. So what companies have done is they've actually starting going to dual router, where they had 2.4 and 5.0 gigahertz. If you're far away, you can get WI-FI because the 2.4 will actually work in a different room well. 5.0 will give you faster speeds locally. So it's a balance of where the router is, what the antenna says, and everything else. Just to say you went from 2.4 to 5.0, that's not industrial strength WI-FI. That's just enabling conductivity.

THE COURT: Thank you. If you want to object to my questions, please do.

MR. MARKHAM: Well, it's not my practice, your Honor.

THE COURT: I know that there --

MR. MARKHAM: I would move --

THE COURT: I understand that we have not heard the last word on that.

MR. MARKHAM: I would like to just for the record move to strike about 99 percent of it as nonresponsive to your question, and that he's not qualified as an engineer.

THE COURT: I did get way more than I bargained for.

Go ahead.

MS. McKEAN: As you see, he has knowledge beyond what we're seeking to admit him for.

BY MS. McKEAN:

Q. After -- strike that.

We saw earlier Dr. Woolf's report and talked about the fact that the school had asked that that independent evaluation be done.

Do you recall that?

A. I do.

Q. Do you know if the school asked for any other doctor to see G?

A. They did.

Q. Do you recall who that doctor was?

A. Dr. Lebel, who's a headache specialist at Children's Hospital.

Q. Did she ultimately see G?

A. She did.

Q. Can you turn for me to Tab 17 of Exhibit 1.

Is this the report of Dr. Lebel from the visit you just discussed?

A. Yes, it is.

Q. Can you tell from the report what the date of Dr. Lebel's evaluation of G was?

A. The date of service is 9/10/2015.

Q. Do you know Dr. Lebel?

A. I do know Dr. Lebel.

Q. And where are her offices?

A. They're located in the Waltham -- Waltham annex in Waltham, Massachusetts.

Q. Now, she is a -- strike that.

Does she have a certain specialty?

A. Yes, she -- she treats headaches.

Q. She is a neurologist; correct?

A. She is a pediatric neurologist, yes.

Q. Her main focus is dealing with headaches?

A. That is correct.

Q. Can you turn for me, Dr. Boyer, to the third page of Dr. Lebel's report.

Do you see the section entitled "impression?"

A. I do.

Q. Did Dr. Lebel identify a certain type of headache that she believed G had?

A. Yes.

Q. What type of headaches would those be?

A. It says, "G presents with a history of daily headache pain, tension-type predominant, concurrent with school attendance, prompting concern per his family of an environmental exposure resulting in environmental hypersensitivity."

Q. Is there any indication that Dr. Hubbuch or Dr. Herbert considered Dr. Lebel's evaluation or diagnosis in rendering their opinions in this case?

A. It -- this's no evidence they did.

Q. Do you see further down, two paragraphs down from what we

were just reading where Dr. Lebel talks about a medication that she prescribed for G?

THE COURT: What page are you on, Ms. McKean?

MS. McKEAN: I'm on the third page of Tab 17.

THE COURT: Uh-huh.

MS. McKEAN: Dr. Lebel's report.

BY MS. McKEAN:

Q. And I am in the third paragraph under the word "impression."

Do you see that section, Dr. Boyer?

A. I have it.

MS. McKEAN: Do you have it, your Honor?

THE COURT: Yeah.

BY MS. McKEAN:

Q. Do you see there's a recommendation there that G begin a certain medication?

A. Yes, Verapamil.

Q. To your understanding did G ever start that medication?

A. I'm not aware that he did.

Q. Now, in the second sentence, it states, "He was advised to seek alternative therapy such as massage, essential oils, and possible acupuncture or Reiki?

A. Reiki.

Q. Did you see any indication in any of G's records that he ever engaged in that type of therapy?

A. There is none.
Q. Did you see any indication that Dr. Herbert or Dr. Hubbuch -- strike that.
Did you see any indication that Dr. Herbert or Dr. Hubbuch's records as to whether they considered the fact that G had not followed through with the recommendations of Dr. Lebel?
A. There's no evidence that they knew of that.
Q. Do you think they should have?
A. Yes.
Q. Why?
A. Because there are two different types of interventions described here. One is the medication-based intervention. The other is -- the other are more cognitive psychological or cognitive behavioral interventions. Knowing which one would work, which one didn't and what the impact was would have been important in further defining a differential diagnosis.
Q. We looked earlier about the fact that G didn't have a psychological evaluation prior to Dr. Hubbuch and Dr. Herbert's diagnosis.
Do you remember that?
A. That is correct.
Q. G did at some point though have a psychological evaluation; correct?
A. Yes, it's part of the workup in the children's headache

clinic in the Waltham annex.
Q. Is that part of the appointment with Dr. Lebel?
A. It was.
Q. So that that is part of what the school requested G's parents do this in case?
A. Yes, that's correct.
Q. Can you turn for me to Tab 18 of Exhibit 1.
Is this one of the documents you reviewed in determining the reliability of Dr. Hubbuch and Dr. Herbert's reports?
A. Yes, it is.
Q. Is this a psychological evaluation of G?
A. Yes, it is.
Q. Can you tell by the date -- by this document what the date of this evaluation is?
A. Yes. It is 9 -- September 10th, 2015.
Q. Can you tell what the name of the doctor was that performed that evaluation?
A. Rupa Gambhir.
Q. Do you know if she's part of Dr. Lebel's practice?
A. It's part of an integrative practice that they have in the clinic.
Q. Can you turn for me, Dr. Boyer, to the page that is Bates stamped Lebel 10 of this report.
MR. MARKHAM: Upper right, is that what you're asking

for?

MS. McKEAN: I'm sorry, Mr. Markham.

MR. MARKHAM: The upper right is that where --

MS. McKEAN: The upper right Bates stamp Lebel 10. Are you there, Mr. Markham?

MR. MARKHAM: Yeah, I'm there. I'm just wondering about the witness.

BY MS. McKEAN:

Q. Are you there, Dr. Boyer?

A. Yeah.

Q. Okay. From the -- do you see the section entitled "Assessment/Plan?"

A. I do.

Q. Do you see that the line that starts "from a psychological perspective?"

A. I do.

Q. Can you read that line for me.

A. Yes. "From a psychological perspective, psychosocial factors may play a role in the maintenance of patient's headaches."

Q. Any indication that Dr. Hubbuch or Dr. Herbert considered this statement by Dr. Gambhir in rendering their opinions in this case?

A. No, there's not.

Q. Now, further down, the line that starts, "since pain and

pain-related interference..."

Do you see that line?

A. Yes.

Q. Can you read that line for me out loud.

A. "Since pain and pain-related interference are both a source of stress and tension which may in turn reinforce pain or pain behaviors, such as avoidance, patient may benefit from learning relaxation strategies to increase his existing repertoire of self-management strategies."

Q. Is there any indication that the parents of G followed through with this recommendation?

A. There's not.

Q. Is there any indication that Dr. Hubbuch or Dr. Herbert considered that fact in rendering their opinions in this case?

A. There's not.

Q. Should they have?

A. Yes.

Q. Why?

A. Because knowing a course of therapy is once again important in delineating a cause of -- a cause of the presentation.

THE COURT: What is -- why would you proscribe or what is the -- what's the significance of Naproxen?

THE WITNESS: Naproxen is a nonsteroid anti-inflammatory agent. So if you had inflammation that was

caused by, say, muscle tension, you could lessen the impact of the muscle tension, decrease the stress that result from it, and improve the headache.

THE COURT: Okay.

BY MS. McKEAN:

Q. Now, the Verapramil, is that -- am I pronouncing that correct?

A. Verapamil.

Q. The Verapamil, is that a drug that's intended to be taken every day?

A. I would have to go back and look at what they prescribed.

THE COURT: It was at least from what I read.

THE WITNESS: It's supposed to be taken twice a day.

BY MS. McKEAN:

Q. And is that intended as a headache preventive medication?

A. I believe it is.

Q. Any indication that G ever took that medication?

A. No.

Q. Now, Dr. Lebel's report on the page Bates stamped Lebel 20. It's Tab 17 --

A. Yeah.

Q. -- of Exhibit 1.

A. I'm there.

Q. Do you see the second-to-last paragraph on that page?

A. Yes.

Q. And do you see that it indicates that G and his family are welcome to return for follow-up within the next few months and to call to report on progress?

A. Yes.

Q. Is there any indication that G's parents brought G back to see Dr. Lebel?

A. There's no evidence that there was a second face-to-face visit between G and Dr. Lebel.

Q. Can you turn for me to Tab 19 of Exhibit 1.

Is this one of the documents you reviewed in order to determine whether or not Dr. Hubbuch and Dr. Herbert's opinions were reliable in this case?

A. Yes, it is.

Q. Is this a medical record from Dr. Lebel?

A. Yes, it is.

Q. Now, I see it indicates headache visit.

Do you see that?

A. Yes.

Q. And then it has a date of October 26th, 2015?

A. Correct.

Q. So that would have been about a month and a half after that first appointment with Dr. Lebel; correct?

A. That's correct.

Q. Any indication that G was present at this appointment?

A. There's none.

Q. Can you tell from this record who was present at this appointment?
A. It says mother of G was seen in the office today to discuss his progress.
Q. Were you concerned at all that mother went back to see Dr. Lebel without her son?
A. I find it certainly odd.
Q. Any indication that Dr. Hubbuch or Dr. Herbert considered that in rendering their opinions?
A. No.
Q. Do you think they should have?
A. Yes.
Q. Why?
A. Because if you're trying to treat a condition such as headache, why not bring the patient back for re-evaluation.
Q. And is there any indication that the parents of G ever brought him back to be evaluated by Dr. Lebel?
A. There's not.
Q. Did Dr. Hubbuch and Dr. Herbert in rendering their opinions assess whether G had exhibited symptoms at other locations where WI-FI was present?
A. They did not.
Q. Can you turn for me to Tab 20 of Exhibit 1.
Is this a document you reviewed in order to determine whether or not Dr. Hubbuch and Dr. Herbert's opinions were

reliable in this case?
A. It is.
Q. Do you know what this document is?
A. I believe this is a record maintained by G's mother of events surrounding his headaches.
Q. To your understanding, did G prepare this document?
A. I don't believe he did.
Q. And did -- strike that.

We saw --

THE COURT: Ms. McKean, I'm not sure you can get a 12-year-old boy to submit this level of detail. That's probably for another day.

Keep going.

BY MS. McKEAN:
Q. In your experience can a 12-year-old boy complete a headache diary?
A. He can certainly make that attempt. It -- I think you're right, Judge, it's not going to be to this level of detail, but what you do have is at least a time and a location, and from that you can fill in other pieces of information, even though it doesn't have every single piece of minutia which surrounds it.
Q. Any indication that G[redacted] kept a written diary of school as to when he got a headache, during what classes, and what he was doing during those times?

A. There's not.
Q. Do you think he can could have been capable of doing that?
A. Not having examined G, it's impossible for me to say with total clarity, but you certainly try.
Q. Is that something you would have recommended the patient do in this case?
A. Yes.
Q. Is there any indication that Dr. Hubbuch or Dr. Herbert recommended that?
A. There's not.
Q. Now, we saw that G[redacted] went for a number of doctor's appointments; correct?
A. Yes.
Q. For example, we saw that G[redacted] went and saw Dr. Dinakar at Boston Children's Hospital; do you remember that?
A. Yes.
Q. Are you -- strike that.

Where is Dr. Dinakar's office?

A. It's in the -- it's physically in Children's Hospital, Boston Children's Hospital itself.
Q. Do you know if Boston Children's Hospital has WI-FI?
A. They have lots of WI-FI.
Q. Did you look and determine whether or not G[redacted] exhibited any symptoms on the date he saw Dr. Dinakar?
A. There's no documentation that he did.

Q. And specifically can you turn for me to the second page of Exhibit 20.

Are you there?

A. Second page, yes.

Q. We saw that G was evaluated by Dr. Dinakar on December 9th, 2014.

Do you recall that?

A. December 9th.

Q. December 9th, 2014?

A. Yes, that's correct.

Q. On this chart, is there any indication that G had any symptoms on September -- excuse me -- December 9th, 2014?

A. No.

Q. And is it fair to say that it appears that G had symptoms on days before that and after that?

A. Yes, he did.

Q. Was it significant to you that G had been at Children's Hospital to see Dr. Dinakar, but didn't have symptoms?

A. He was seen at Children's Hospital, and there's no record of any symptoms occurring.

Q. Was that significant to you?

A. Yes.

Q. Is that something that you would have considered if you made a diagnosis in this case?

A. I would.

Q. Why?
A. Because he is in a WI-FI environment and has no symptomatology.
Q. Now, we also saw earlier that Dr. Dinakar ordered a MRI.
Do you remember that?
A. I do.
Q. And we saw that that MRI was on December 19, 2014; right?
A. That's correct.
Q. Do you see any indication on this document that G had any symptoms on the date of the MRI?
A. I do not.
Q. Is that significant to you?
A. Yes.
Q. Why?
A. Because an MRI requires a superconducting magnet to create a high -- high power electromagnetic field in order to acquire the signals that it uses. So he's in an MRI, which is an intensely powerful field, powerful enough that you have to construct a ferreted cage around it so it doesn't extend beyond, right. And while he's in that extremely powerful -- you know, while he's in that extremely powerful electromagnetic field, he has no symptoms whatsoever.
Q. In rendering their opinions in this case, did Dr. Hubbuch and Dr. Herbert make any effort to determine whether or not G had any symptoms during his MRI?

A. I can't tell that they did.
Q. Do you think they should have?
A. Yes.
Q. Why?
A. Because if you're sensitive to -- if you're sensitive to that stimulus, you should have symptoms when you're exposed to it. He was exposed to massive RF fields and had no complaints.
Q. We saw that doctor -- strike that.

We saw that G went and saw Dr. Woolf on January -- excuse me -- let me start over. Strike that.

We saw that Dr. Woolf evaluated G on June 29th, 2015.

Do you recall that?

A. I do.
Q. Did you look at this chart to determine whether or not G had any symptoms while he was being evaluated by Dr. Woolf?
A. I don't believe that he did.
Q. To your knowledge did Dr. Woolf's offices have WI-FI?
A. Yes, they do.
Q. You worked in that department; correct?
A. Yes.
Q. You're knowledgeable about whether there is WI-FI there?
A. Yes.
Q. And they have WI-FI?
A. Yes.
Q. If we look at this chart on the third page -- excuse me

-- the fourth page -- no, third page.

Is there any indication that G had symptoms on June 29th, 2015?

A. I'm sorry. I'm not quite there yet. Which day? June?

Q. June 29th, 2015?

A. No, there's not.

Q. How about on the date of Dr. Lebel's appointment, September 10th, 2015?

A. No, there's not.

Q. Now, he did have symptoms the day before, September 9th, right, according to this chart?

A. Yes.

Q. Is it significant -- strike that.

Did Dr. Hubbuch and Dr. Herbert in rendering their opinions consider that G had been at these appointments where there was WI-FI present but never exhibited symptoms?

A. Yes, it is.

Q. My question was: Did they consider those facts?

A. They did not consider those.

Q. Should they have considered those facts?

A. Yes, they should have.

Q. Why should they have considered those facts?

A. Because once again, if you are truly hypersensitive to WI-FI, you should have it in the environments where there's WI-FI. You can't pick and choose among the environments where

you don't choose to have hypersensitivity.

Q. And in this case, did Dr. Hubbuch and Dr. Herbert pick and choose where they chose to consider whether G was exhibiting symptoms where there were locations of WI-FI?

MR. MARKHAM: Objection.

MS. McKEAN: Strike that.

BY MS. McKEAN:

Q. Dr. Boyer, do you think there were other locations that Dr. Hubbuch and Dr. Herbert should have considered that they didn't?

A. Yes.

Q. Should Dr. Hubbuch and Dr. Herbert have considered all locations where G was present where there was WI-FI to determine whether or not he had symptoms or not?

A. Yes, they should have.

Q. Did they?

A. They did not.

Q. Based on all the facts that we have just gone through that Dr. Hubbuch and Dr. Herbert did not consider, do you believe that their opinions are reliable?

A. I do not.

Q. Do you believe that their opinions are based on sufficient facts or data?

A. They are not.

Q. In order to have rendered reliable opinions should they

have relied upon all the facts that we went through today?
A. I believe they should have.
Q. In your report you use the term "diagnostic" -- excuse me -- "premature diagnostic closure"; correct?
A. I did.
Q. Can you tell me what that is?
A. Yes. It's -- it's identifying a diagnosis and sticking to it in absence of any other information. You know, sorry. It's sticking with it without adequate information to form it to begin with, and even when other information presents itself which suggests alternative diagnoses.
Q. Do you believe Dr. Hubbuch and Dr. Herbert applied premature diagnostic closure in this case?
A. I believe they suffered from premature diagnostic closure.
Q. In what way?
A. Meaning they were willing to assign a diagnosis based on a limited history and no physical examination and then stick with it even when there's sufficient evidence that they should have considered.
Q. In your opinion does that render Dr. Hubbuch and Dr. Herbert's opinions in this case unreliable?
A. Yes, it does.
Q. Earlier today, you talked about the fact that you believed that Dr. Hubbuch and Dr. Herbert did not use scientifically reliable methods in coming to their opinions; is that correct?

A. That is correct.
Q. Did you determine the method that was used by Dr. Hubbuch and Dr. Herbert to diagnose G in this case?
A. They attempted to use the method involving the differential diagnosis.
Q. What is a differential diagnosis?
A. It's a process by which you take a patient, the history, the physical, any data which happens to be present and identify a series of diagnoses which could explain that patient. The next step is to take the components, each one of those diagnoses in the differential and identify which ones apply, and you do that by additional history, additional testing.
THE COURT: Can you give me an example.
THE WITNESS: You present to the emergency department with chest pain.
THE COURT: I've done that.
THE WITNESS: I might have seen you there. You present to the emergency department with chest pain. The differential diagnosis in chest pain in an older white male in the United States includes a number of things, including myocardial infarction. It includes Boerhaave's, an esophageal rupture. It includes a dissection of the aorta where it's about to rupture. It can include pneumonia. It can also include cholecystitis, a gallbladder attack.
Once you -- once the clinician has developed a

differential diagnosis, the next step involves identifying which things matter. Do you get it only with activity? That takes out gallbladder. Do you get it only with -- sorry. You don't have any vomiting. That takes out Boerhaave's. You have never had a fever or cough. That takes out pneumonia. So that leaves myocardial infarction. There's more than one type of myocardial infarction. There's a full thickness injury to your heart, and there's a partial thickness injury to your heart. Both of those are managed in different ways, and they require the next step of evaluation to determine if heart attack is an SD segment elevation myocardial infarction or a non-SD segment myocardial infarction; or if it's just end-stage ischemia leading to worsening congestive heart failure.

THE COURT: Thank you.

BY MS. McKEAN:

Q. Dr. Boyer, did Dr. Hubbuch and Dr. Herbert properly employ differential diagnosis in this case?

A. They did not.

Q. Why not?

A. Because at the first visit, there was no differential diagnosis. It was just headache EHS, that's what you got. After they had additional information, they might have expanded it, but they included things which they indicated were irrelevant. The best example of that is that they did a Lyme test. Even though there was no Lyme exposure, nothing

consistent with Lyme, Dr. Hubbuch still did a Lyme test. She was just testing in the dark. It's a scattershot approach.

If there was a broader differential which they delineated, and at no point did they write down what their differential diagnosis was. If there was a broader differential, and they decided to proceed testing, the testing was incomplete, and the problem there is the autoimmune disorders that Dr. Hubbuch was worried about. She tested for an ANA, which is an antinuclear antibody. Antinuclear antibodies -- you know, they can have elevated concentrations in two broad disease states: Autoimmune and connective tissue disorders. But I've got to tell you when I'm the doc working clinically with patients and I admit somebody that I'm worried about an autoimmune or connective tissue disorder, I have the treating specialist fax the whole list of lab tests that they want sent because it's too many to write down. They didn't do sufficient testing to rule anything out because the false positives and false negatives for those tests are prodigious, and they require a considerable degree of expertise to try and tease through. So they didn't do adequate testing for a broader differential. They were just testing in the dark for a more limited differential.

Q. They did do one test for the autoimmune disease though; right?

A. They did that one test, the ANA.

Q. So are you saying that they truly believed he had that that they should have done a lot more testing?
A. If they truly believed it, it mandates a lot more testing than that.
Q. And would you expect if they did the first test and were performing a differential diagnosis with respect to autoimmune, that they would go forward and do them all to be complete?
A. If they were interested in being complete, yes.
Q. Is there any indication they did those other tests?
A. There's no indication of that.
Q. Well, we saw that Dr. Woolf mentioned some other possible environmental causes?
A. Yes.
Q. Do you remember that?
A. Uh-huh.
Q. Did Dr. Hubbuch or Dr. Herbert at any time conduct any tests on those other environmental causes mentioned by Dr. Woolf?
A. There's not necessarily a test they might have done, but they might have pursued, or they should have pursued a school visit to identify if any of those things might be present.
Q. Did Dr. Hubbuch or Dr. Herbert ever go to the school?
A. There's no evidence that they did.
Q. In your opinion, should they have?
A. Yes, they should have.

Q. In your opinion, should they have in conducting a reliable differential diagnosis?

A. Yes, they should have.

Q. Why?

A. Well, because once you've completed, once you've got a complete history and a complete physical, sometimes people see what they want to see; and if you're truly an expert in environmental evaluations, you want to actually go to see if it's not really the box of, you know, the box of documents which is causing intolerance. You want to know if it's the variation in light which is causing it. An expert has a greater chance of doing that with a site visit. And that's why a site visit would have been necessary.

Q. We saw that Dr. Dinakar and Dr. Lebel and Dr. Gambhir recommended some alternative treatment.

Do you remember that?

A. Yes.

Q. Do you have a general phrase for that type of treatment that they recommended?

A. It's psychological or cognitive behavioral treatment.

Q. Is -- strike that.

Did Dr. Hubbuch and Dr. Herbert employ at all cognitive behavioral therapy in their differential diagnosis?

A. They did not.

Q. In your opinion, should they have?

A. Yes.
Q. Why?
A. Because if you have -- if you have a condition where you have no objective findings of illness, which can be discerned by an independent examiner, you want to do a therapeutic trial to identify if there's an improvement. If there's an improvement in condition then that tells you that you are dealing with one set of items on a differential diagnosis as opposed to a separate set of items.
Q. Did Dr. Hubbuch or Dr. Herbert ever do that in reaching their opinions in this case?
A. They did not.
Q. You talk about -- strike that.

We saw that both Dr. Hubbuch and Dr. Herbert only evaluated G[redacted] one time each; is that correct?

A. That's correct.
Q. Do you think that's problematic in this case?
A. Considering that they had the opportunity to, and in light of the report that there was a worsening of condition, yes, they should have.
Q. You talk a lot about the idiopathic nature of G's symptoms in your report.

Can you explain to us what you mean by that.

A. An idiopathic finding is just something for which there is no recognized pathophysiologic cause. There's no known cause.

Q. There's no known cause. And in your opinion -- strike that.

How is that applicable to G's situation?

A. Because if you have the known causes of headache, and if you have the idiopathic causes of headache, if you eliminate all the -- if you eliminate all the known causes, like you get rid of a brain mass, if you get rid of, say, blood dyscrasias, like a tumor, if you get rid of those, encephalitis, or meningitis or high blood pressure, that doesn't make electromagnetic hypersensitivity more likely. It actually makes an idiopathic cause more likely because the idiopathic causes of headache, headaches for which there are no known cause, are actually the most common causes of headache.

Q. Now, are there also idiopathic causes for G's other symptoms, such as ringing ears, dizziness, nausea?

A. Yes, that's correct.

Q. And are those idiopathic causes also common on those type of symptoms?

A. Yes, they are.

Q. In your opinion, did Dr. Hubbuch and Dr. Herbert by ruling out the causes that they did in this case make it more likely that G has EHS?

A. No, they actually --

Q. Why?

A. They actually made it less likely that he has

environmental -- I'm sorry -- electromagnetic hypersensitivity.

Q. Why is that?

A. Because the most common cause of headache are idiopathic.

Q. Based on what you've testified today in your opinion did Dr. Hubbuch and Dr. Herbert use a scientifically reliable method to come to their conclusions?

A. They did not.

Q. In your opinion did Dr. Hubbuch and Dr. Herbert's failure to use a scientifically reliable method to come to their conclusions render their opinions unreliable in this case?

A. Yes, it does.

MS. McKEAN: Thank you, Dr. Boyer.

That's all I have, Judge.

THE COURT: Mr. Markham, let's do this. Let's take five minutes, and then I'll let you begin your cross. We're going to go until about 1:15, and then we're breaking this for the day because I have other stuff.

MS. McKEAN: So, your Honor, there is an issue, and we talked a little bit on the break. Unfortunately, Dr. Boyer is going to be in Australia the week of the next two-day hearing date, and I do recognize the late hour, and I'm fairly certain that doctor -- excuse me -- Mr. Markham is going to want additional time. I don't know if we could possibly, you know, find an hour or two between now and the next hearing dates to be able to bring Dr. Boyer back to finish his

cross-examination, because he's not going to be available on the 28th and the 29th.

THE COURT: Let's do this. Let's see how far we get, and we'll talk about it.

MS. McKEAN: Thank you, Judge.

THE COURT: Five minutes.

THE CLERK: All rise.

(There was a short recess.)

THE CLERK: All rise.

Please be seated.

THE WITNESS: Sorry.

THE COURT: No, no problem. No problem. That's the beauty of doing this jury waived at least for now.

MR. MARKHAM: Your Honor, may I proceed? We're going to start by marking Plaintiffs' Exhibit 1, unless you want Plaintiffs' Exhibit A, your Honor.

THE COURT: No, let's make it Exhibit 2.

MR. MARKHAM: Plaintiffs' Exhibit 2.

THE COURT: Just the number 2.

MR. MARKHAM: It has got a plaintiffs' sticker on it.

THE COURT: That's all right.

MR. MARKHAM: Okay.

MS. McKEAN: John, are these yellow stickers your stickers?

MR. MARKHAM: Yes.

THE COURT: Is there any objection?

MS. McKEAN: I have no objection, your Honor.

(Exhibit No. 2 was admitted into evidence.)

MS. McKEAN: I have one for the Court, the original, and I have one for the witness.

May I approach to deliver them?

THE COURT: You may. You may.

MR. MARKHAM: I think somebody got two. Did you get two?

THE CLERK: I got one.

MS. McKEAN: If we can put the original -- may the original be used by the witness?

THE CLERK: Yeah, go right ahead.

MS. McKEAN: John, do you know if this is the same as Exhibit 19 to defendants' motion to exclude?

MR. MARKHAM: It could be. I don't know. This is --

MS. McKEAN: As I flip through it, I believe that it is.

MR. MARKHAM: I have to see it. Okay. We'll offer it without objection, your Honor, Exhibit 2.

CROSS-EXAMINATION

BY MR. MARKHAM:

Q. And could I ask you to look -- first of all, good afternoon, Dr. Boyer.

We met before in a deposition; correct?

A. Yes.
Q. And can you take a look through Exhibit 2 and see whether you've -- you recognize that as the formal opinion that Dr. Hubbuch described that she's going to give at the trial if the judge allows her to?
A. Yes, I recognize this.
Q. All right. And can you turn to the back -- have you ever seen the last two pages of Exhibit 2, the last three pages?
Have you ever seen those before, her curriculum vitae?
A. I believe I have.
Q. Okay. And your testimony you gave today had that curriculum vitae in mind?
A. I believe so, yes.
Q. Okay. And I want to go back to your report for a moment and just ask you some questions about it. In your report, it's fair to say you indicated all of the matters that you had reviewed in formulating the report that you wrote; is that right?
A. All the matters?
Q. Well, you have a -- you have an Appendix C?
A. Like legal matters or publications?
Q. Well, you have a -- an Appendix C which describes the matters that you reviewed?
A. Do you have a copy for me to look at?
MR. MARKHAM: I sure do.

May I approach, your Honor?

THE COURT: Yes.

MR. MARKHAM: Let's mark it as Exhibit 3.

(Exhibit No. 3 was received into evidence.)

Q. I'm putting in front of you Exhibit 3. I have one for the Court as well.

Is Exhibit 3 the report that you wrote for this case?

A. I believe so, yes.

Q. Do you have any doubt?

A. I have no doubt.

Q. All right. And is there a part of this report that specifies the matters that you reviewed before writing the report about the report?

A. It starts at C-1 towards the back.

Q. Thank you.

A. These are -- these are some of the references that I reviewed.

Q. Well, it says, "Materials Reviewed and Accessible Materials."

Was this not a complete list?

A. It's virtually impossible for me to ever present a complete list of everything that I've read and reviewed.

Q. Well, it doesn't say that anywhere. This says, "Materials Reviewed and Accessible Materials?"

A. I understand what it says, but as a medical toxicologist I

continually read and review different things.
Q. All right.
A. My experience -- my experience is not bounded by this list.
Q. I didn't ask you that. I just asked you for the materials that you reviewed in rendering this report. The things that you read before you wrote this report. Obviously, you've read a lot of things about medicine, Doctor, in your career. I'm not asking about those. I'm not trying to limit you that way.

Is this a complete list of the materials that you specifically reviewed for writing this report?
A. I also reviewed the materials listed in Dr. Herbert's report as well.
Q. Dr. Herbert?
A. Yeah.
Q. Okay. Anything else that you can remember?
A. No, not that I remember now.
Q. Okay. What do you mean when you say, "accessible materials?" The full quote on the Exhibit 3 title is "Materials Reviewed and Accessible Materials?"
A. If people wanted to access the material then they could look at it particularly. Often I a present a URL for it.
Q. I'm sorry. What?
A. I present a URL for it.
Q. What is a URL?

A. I forget what it stands for, but it's how to retrieve it.

THE COURT: It's a link.

Q. It's a link. All right.

A. Thank you.

Q. So does that mean you didn't review them, they were just accessible, or you actually reviewed those topics, those matters?

A. I believe I did my best to review them in some measure.

Q. All right. Does this look like a complete list of what you reviewed?

A. Without -- without my looking at the file that I had, I don't know that I could say. It looks relatively complete, but I know that there are things on Herbert's -- Herbert's report that I looked at which are not reported here.

Q. All right. But you made an attempt to make this a complete review list?

A. I did my best, yes.

Q. Okay. Did you review G's deposition testimony?

A. I don't know that I received -- I don't know that I got G's deposition testimony before I wrote this.

Q. Right. I'm just asking you whether you reviewed it?

A. I don't recall reviewing it.

Q. Okay. Did you review it since you got this report?

A. I don't recall reviewing it.

Q. Did you review the mother's testimony, deposition

testimony?
A. I think I did, but I don't recall the -- much of the content of it.
Q. I note that it's not specified here. Would that impact your view on whether you read it?
A. Not necessarily.
Q. So it wasn't a complete statement of what you reviewed?
A. I think I said that.
Q. You made your -- you would have forgotten the mother's deposition?
MS. McKEAN: Objection.
THE COURT: Overruled. Let's keep moving here.
THE WITNESS: I didn't say that.
BY MR. MARKHAM:
Q. Did you review Dr. Lebel's deposition?
A. I don't remember if I read that.
Q. Dr. Woolf's deposition?
A. I did not read Dr. Woolf's deposition.
Q. Dr. Waugh's deposition?
A. I don't recall reading Dr. Waugh's deposition.
Q. Do you know whether in any of those depositions, any of those doctors talked further about their reports and made elaborations on them?
A. I don't know.
Q. Okay. Did you read Dr. Hubbuch's deposition?

A. I don't recall.
Q. Do you know whether Dr. Hubbuch's deposition had any explanations about any of the matters in her reports that you have been talking about today?
A. If it was a deposition, I'm sure there are explanations. I don't know what those explanations were.
Q. All right. And you don't remember any of them, if you did read it; correct?
A. Not as I sit here today.
Q. So the explanation she gave about the reports that you have been giving opinions on in her sworn testimony are not something that can form the basis of your opinion here today; fair enough?
A. I limited my analysis to the medical records and the medical literature that I had.
Q. But can you answer my question?
A. I did.
Q. Did you -- did you take into account any of the explanations that she gave in her deposition about what is in her notes? Did you take that into account; yes or no?
A. I don't know.
Q. You don't know?
A. I don't recall reviewing it, so I don't know that I could have taken it into account.
Q. You don't remember anything from her deposition, do you?

A. Not offhand, no.
Q. All right. Okay. Do you know what G testified concerning how his headaches increased from the fifth grade to the sixth grade to the seventh grade?
A. I don't know because that was not part of a medical evaluation.
Q. I just asked you whether you knew?
A. I don't know.
Q. Okay. Now, do you know the amount of time that G is exposed to WI-FI -- was exposed to WI-FI during the typical class day at Fay?
A. I do not.
Q. Do you know how many access points there are at Fay from which WI-FI is beamed throughout the school building?
A. I do not.
Q. Would it surprise you to learn that there are 42 of them?
A. I'm an emergency physician. Nothing surprises me much any more.
Q. All right. Well, would that surprise you -- so it doesn't surprise you?
A. The number of access points is the number of access points.
Q. Okay. Do you know how many access points his new school has, the Waldorf School?
A. No.

Q. All right. Would it surprise you to learn that there are only two?
A. No.
Q. And do you know how many computers in each classroom at Fay there are on average using the WI-FI that is being beamed into the classroom by one or more of the access points at Fay, one or more of the 42 access points?
A. If one of your experts had done a site visit, I would have been able to review that.
Q. You didn't go to the school, did you?
A. I wasn't asked to provide a diagnosis.
Q. Did you ask anybody whether -- how many computers there were?
A. My analysis was limited to the medical records.
Q. But you've testified about how G was exposed to WI-FI at other places; correct?
A. Yes.
Q. And in your report, you even mention that he's exposed to WI-FI by passing trucks that have WI-FI in them; correct?
A. He is.
Q. But that's what you said. Do you have any basis for comparing that type of exposure to WI-FI to the type of exposure he gets at The Fay School, if I were to tell you that there are approximately 15 computers beaming back to access points for six hours a day?

MS. McKEAN: I'm just going to object to the use of the term "beaming." There is no foundation for that statement. It's an improper use of that statement, and to tell you the truth there's no scientifically derived evidence in this case to support the use of that statement.

BY MS. McKEAN:

Q. I'll change the word. EMF. How does EMF get from an access point to a computer that's using the WI-FI; do you know?

A. It creates a static field which is received by an antenna.

Q. And the antenna receiving it is in the computer, the laptop?

A. It can be.

Q. Okay. And the static field comes from where?

A. The static field comes from a router.

Q. Okay. Which is -- you understand router being another name for an access point?

A. Yes.

Q. Okay. So when the access point --

THE COURT: I like "beaming" better. Go ahead.

MR. MARKHAM: I do too, but you know. Okay. Can I use "beaming" for the purpose --

THE COURT: No, no, no, no. I'm interjecting myself when I shouldn't. Keep going.

Q. The static field, how does it get from the access point to the computer, if not by being beamed?

MS. McKEAN: Your Honor, this is well beyond the scope of this witness's testimony or his report.

THE COURT: Overruled. Overruled. You may answer.

THE WITNESS: It extends to the limit of -- it extends to the limit of field strength.

BY MR. MARKHAM:

Q. But how does it do it? Does it beam? Does it --

A. It does it in the same way that these lights beam information to us.

Q. I like that word. Can we use "beam" now that you've used it?

A. I don't care much what terms you use.

Q. Okay. But you'll understand what I'm talking about. Beaming from the access point to the computer; correct?

A. That's technically not correct because it's not a directed field.

Q. Okay. Do you know how -- do you know that there are approximately 15 laptop computers using the WI-FI from the access points in the classroom?

A. There can be 50. There could be 100.

Q. Okay. And do you know how long a day G is exposed to that amount of -- dare I say -- beaming?

A. No, I don't.

Q. Okay. Do you know how many -- how many computers were in each of the doctors' offices, Lebel and Woolf, and the other

doctors' offices that were using the WI-FI at the time G went?
A. I think there's one, but -- I think there's one.
Q. All right. And do you know how long G was in Dr. Lebel's office?
A. The time is not documented. If it's a time of which the report was written, it doesn't have a time in and time out.
Q. You don't know?
A. There's no documentation that I can tell.
Q. So you don't know; right?
A. Correct.
Q. Okay. And how about Woolf?
A. The typical emergency Pediatric Environmental Health Clinic visit takes about four hours.
Q. And you believe that's what happened in this case, or do you know?
A. I think it's a reasonable -- I think it's a reasonable approximation of it.
Q. And if you were to find out it would be less would that surprise you?
A. Probably.
Q. Okay. All right. But you don't know, do you?
A. A precise number of minutes, no, I don't.
Q. Okay. And do you know how long the MRI was that G took?
A. A typical MRI of the spine is about -- sorry -- of the cervical spine is 45 minutes, and of the brain is about

45 minutes, so we're talking on the order of a couple of hours.
Q. Do you know what G said when he was asked whether or not he had any headache from the MRI?
A. I know what the contemporaneous documentation was.
Q. Do you know what he said?
A. No, I don't.
Q. Now, Exhibit 2, you've read this; correct?
A. Yes, I have.
Q. And you understand that to be the report that Dr. Hubbuch wrote for the purposes of this litigation?
A. That's correct.
Q. And she wrote it in March of 2016; correct?
A. The date is March 25th, 2016.
Q. And that was after all of the records that you reviewed in answer to Ms. McKean's questions had been generated, fair enough?
It's all before this report was written?
A. Yes, I believe so.
Q. Do you know how many of those records Dr. Hubbuch reviewed?
A. In the clinical evaluation, I can't tell that she reviewed any of them.
Q. Do you know how many?
A. In the clinical evaluation, I can't tell that she reviewed any of them.

Q. Do you know whether or not, despite what you're calling the clinical evaluation, Dr. Hubbuch had access to and reviewed any or all of the records that are listed in Exhibit 1, Tabs 1 through 20?

A. It's unclear to me she reviewed any of them.

Q. But you don't know?

A. I only know what's written down.

Q. All right. And is that a no, you don't know?

A. I don't think anybody knows.

Q. And so did you ever call Dr. Hubbuch to ask her about any of her methodology?

A. No, I did not.

Q. Did you ever call Dr. Herbert?

A. I did not.

Q. Did you ever call Dr. Carpenter, who is giving an opinion on the general causation in his opinion that EMF can have in a certain limited number of people who report symptoms after being exposed to EMF?

A. I'm sorry. Can you repeat that.

Q. Yeah. Did you ever talk to Dr. Carpenter about the contents of his report?

A. I did not.

Q. Okay. Now, in -- you said something about diagnostic -- premature diagnostic closure?

A. Yes, that's correct.

Q. And what is that again?
A. It's arriving at a diagnosis without adequate information or adhering to -- excuse me. I've got a cramp -- or adhering to the diagnosis.
MR. MARKHAM: Excuse me. Do you want to walk?
THE WITNESS: I just need to stand up.
MR. MARKHAM: Do you know, Doctor?
THE WITNESS: No, I've had my left ankle fused, and sometimes I get a cramp.
MR. MARKHAM: Take your time.
THE WITNESS: That's all I need. Judge, is it okay if I need to stand up and just keep going?
THE COURT: Yeah, absolutely.
THE WITNESS: Okay. Thank you. Did I finish answering it?
MR. MARKHAM: I don't know.
THE WITNESS: I don't know either.
Q. Give us your definition of a premature diagnostic closure.
A. It's prematurely moving to a diagnosis or sticking with a diagnosis after additional information suggests otherwise.
Q. Okay. And if somebody comes to a premature -- well, if somebody has an initial impression, that doesn't mean they can't straighten that impression out by looking at other materials subsequently; correct?
A. That's correct.

Q. All right. In fact, in your deposition, don't you say, I'm going to -- I'm going to quote it. Don't you say -- well, I won't quote it. I will ask you about it. Don't you say, coming to a diagnosis and thereafter not pursuing avenues because of that diagnosis that you should have?

A. I don't understand that, unfortunately.

Q. Well, let me read to you then from page 40 of your deposition.

A. Thank you.

Q. Question: In that paragraph, the first paragraph on page 4, halfway down, you used the term, in quotes, premature diagnostic disclosure, unquote. Question -- that is the end of the question. Your answer was --

A. I think I might need to correct it. Did I say diagnostic disclosure?

Q. That was my question.

A. What page is that?

Q. That's page 40. All right. Your answer was: "Arriving at a diagnosis too quickly and failing to consider other diagnoses even after the clinician has arrived at a diagnosis."

Does that sound like something you would have said?

A. Yes.

Q. All right. And I'll represent to you that was the definition you gave. So it is not a premature diagnostic closure if someone comes to a conclusion but then keeps

looking; fair enough?

A. That's a possibility.

Q. Okay. Do you know whether after Dr. Hubbuch wrote her initial letter about this after she was seen by the mother whether she did any additional work?

A. I'm sorry.

Q. Do you know whether after -- let's do it this way. Let's put up Tab 3.

THE COURT: From Exhibit 1?

MR. MARKHAM: Yes, from Exhibit 1, which I believe is the first letter. Tab 3. That's it. We were told to zoom in. All right.

THE WITNESS: I'm sorry. Just give me a second. Okay.

BY MR. MARKHAM:

Q. Okay. Do you know whether or not after Dr. Hubbuch wrote this letter on August 7th, 2014, she stopped doing any attempt at further inquiry into G[redacted] condition?

A. I'm unaware of any evidence that she did.

Q. That she did?

A. I'm unaware if she continued to investigate G's condition.

Q. All right. And does that form part of the basis of your opinion here today that you were unaware that she did anything further after August 7th, 2014?

A. There were additional visits which happened, but between

that and independent of anything else, it's unclear that she did anything actively on her own --

Q. Okay.

A. -- to refine the diagnosis.

Q. Do you remember reading anything in her deposition that explained exactly what she did after August 14 -- August 7th, 2014?

A. I don't recall.

Q. Okay. Now, you indicated -- you made reference to --

A. I mean she -- she had the second office visit where she actually this time performed a physical examination.

Q. All right. So that was afterwards, after this letter?

A. Oh, okay. Okay.

Q. All right. Now, can I ask you to turn to Tab 5 of Exhibit 1, your Honor.

And do you have that in front of you?

A. Could you zoom out a little bit so we can see the same thing.

Q. I thought you had the hard copy in front of you?

A. I do, but I'm only getting a couple of lines. I can't tell --

Q. We were told by the court reporter to zoom in for her purposes, but --

A. No, you can zoom back out. I just need to figure out -- I just want to make sure we're on the same thing.

Q. Okay. And we are. What we have up on the screen you have in front of you in hard copy; correct?

A. Yes, I do.

Q. All right. And just for identifying purposes it's a deposition Exhibit 2016 in the upper right hand; right?

MS. McKEAN: I think 216.

BY MR. MARKHAM:

Q. 216. Sorry.

A. 2-1-6.

Q. Thank you.

A. You're off by an order of magnitude.

Q. All right. Good. Well, now I'm not.

So you read through this and described it to Ms. McKean as something that gave you some trouble because the mother was, you say, kind of dictating the kind of diagnosis she wanted; is that fair enough?

A. That's fair.

Q. Can you turn to page 2 of that. Would you read the first sentence of page 2.

A. "Of course, I want to rule out other causes and for you to tell me I'm crazy. What is your protocol for diagnosing children with EHS?

Q. Okay. So did that have any effect on your view -- well, first of all, did you read the second page?

A. Yes, I did.

Q. Okay.
A. So I guess I got --
Q. There's no question pending. I didn't ask you a question yet.
A. You did ask me a question.
Q. Well, let me just ask --
A. Did it have any impact.
Q. Did it have any impact?
A. Yes, because I had two thoughts how it had an impact. The first is that she's still saying even here, "What is your protocol for diagnosing children with EHS?"

And second, my goal wasn't to examine anyone's behavior other than the scientific method used by Herbert and Hubbuch in developing their opinions.

Q. Right. But you say --
A. Please let me finish. When I find information like this it speaks to the motivation behind something, not any sort of value statement about someone's goals. It's purely about motivation because the motivation for an environmental toxicologic exposure is important in determining where to look and for what causes.
Q. And you derived the motivation, as you perceive it, from that which the people write or speak; fair enough, that reveals the motivation?
A. Fair enough.

Q. And she says, "Of course I want to rule out other causes and for you to tell me I'm crazy." She says that, doesn't she?
A. And what is your protocol for diagnosing children?
Q. Is that -- answer my question for the record, yes or no.
Did I read correctly what she said?
A. You did.
Q. And the protocol for a diagnosis, what does a protocol mean to you?
A. A protocol is a set piece which does not allow any sort of interpretation. It takes out an individual's -- it takes out an individual's thought process and moves down a set piece pathway towards an inevitable goal.
Q. Do you have -- do you use any protocols when you're doing a diagnosis of anything?
A. Actually, no, we don't.
Q. Okay. Have you ever heard of doctors' protocols before where doctors have certain steps they go through in order to do certain medical things, like treatments or diagnosis?
A. We do not use protocols in terms of establishing a diagnosis. We use protocols in terms of standardizing therapy and in terms of minimizing costs. The reason we do not follow a protocol is because it limits our ability to think.
Q. Do you -- did you ever -- did you ever look at the deposition from any other source to try to determine whether what the mother meant was what's involved, what do I

have to do to figure out whether this is the cause? When it's followed by the line, "Of course, I want to rule out everything else." That didn't occur to you?

A. I don't recall seeing it. But I hasten to add my analysis was not on mom. My analysis was on the scientific method used by Doctors Hubbuch and Dr. Herbert.

Q. Okay. I'm asking you about it because you testified about the other part of the document.

Now, could you turn back, please, to Tab 3. Do you have that in front of you? Do you want me to bring it down for you?

A. I've got it.

Q. Okay.

A. This is the August 7th, 2014 --

Q. Yeah.

A. Okay.

Q. Now, that was written to a doctor; correct?

A. It was addressed to a physician.

Q. All right. And did you ever talk to him about whether he received it?

A. I did not.

Q. Do you understand who that doctor is?

A. He's a primary care pediatrician at Southboro Pediatrics.

Q. For whom in this case, G?

A. At that time he was G's primary care pediatrician.

Q. And so Dr. Hubbuch sent this letter to him, and he was at that time the pediatric doctor; fair enough?
A. That's fair.
Q. Okay.
A. Unfortunately, it doesn't have any communication that I am aware of back from him that she saw him.
Q. Okay. Now, let's go back to the opinion that describes her opinion in this case.
A. I'm sorry. Where are we now?
Q. We are on Plaintiffs' Exhibit 2.
A. Okay.
Q. All right. Now, do you understand this to be Dr. Hubbuch's report of her diagnosis after she has completed all the work that she wanted to do on it to present to this court?
A. Okay.
Q. And she itemizes some facts that she considered starting at the bottom of page 1 of Exhibit 2. And it starts by saying, "G has been a student at the Fay School for the -- since the first grade. He was a happy school boy who enjoyed attending class, playing sports, and had many friends. He looks forward to going to school."

Are those all matters that you would have taken into consideration in determining origin of headache?
A. Potentially. It speaks to the degree of psychosocial

integration that he was seeking. I don't know that I need a blow-by-blow event of what happened each year. So it's potentially useful.

Q. All right. It wasn't out of line to note that he was happy and liked the school, was it?

A. No.

Q. Okay. Because, in fact, wasn't it Dr. Woolf who questioned whether they should look at whether there was some sort of school phobia?

A. No, that's incorrect.

Q. Well, who was it?

A. Dr. Woolf suggested that there were other causes, which indicate -- there were other causes which would complete a differential diagnosis, which neither Dr. Hubbuch or Dr. Herbert did.

Q. All right.

A. Dr. Woolf pointed out a number of things.

Q. I just asked you --

A. But I'm giving you the answer.

Q. Well, you're not --

THE COURT: Actually, let's do this. I'm going to ask you to listen carefully to the questions, Doctor. If you can answer the question in the form that's asked, please do; and if you can't, just say you can't answer it in that form, and I'll ask the lawyer to rephrase it.

THE WITNESS: Okay.

THE COURT: Let's have a question, please.

BY MR. MARKHAM:

Q. Yes. Okay. Go back up to the -- the first full paragraph under subsection 1 of Exhibit 2.

A. Okay.

Q. All right. Now, what does that tell you are the symptoms that the mother reported that her son G was suffering?

A. Headaches, dizziness, nausea, tinnitus, and chest pressure.

Q. Okay. And by the way, you said in one of your answers to a question of Ms. McKean that 70 percent of headaches are of an idiopathic cause; is that right?

A. Different studies will have different numbers, but it is a preponderance of cases in this age group that have an idiopathic cause.

Q. Of the headache?

A. Yes.

Q. Does that same percentage apply when the report is headaches and dizziness and nausea and tinnitus and chest pressure?

A. I don't know, because the literature that I looked at and the literature -- I'm sorry -- the education that I recall emphasized the most predominant symptoms which was headaches.

Q. Okay. Is that a yes or a no or you don't know?

A. I don't remember your question now.
Q. The question was if 70 percent of headaches are of unknown origin, that's what idiopathic means; correct?
A. Yes.
Q. Unknown origin. If you couple headaches with other symptoms, such as nausea, dizziness, tinnitus, and chest pressure doesn't that lower -- wouldn't you think that lowers the percentage substantially?
A. Not necessarily.
Q. Okay. And -- how many people have you treated who have come to you with a concern that EMF may be causing symptoms in them?
A. Two.
Q. Do you remember what they told you was -- what they thought the cause was, the particular device?
A. No, this was several years ago. I don't remember.
Q. Do you remember what symptoms they reported?
A. They were vague, nonspecific symptoms, entirely subjective.
Q. Why do you say "entirely subjective?"
A. Because we were unable to identify objective signs of medical illness.
Q. Well, I asked you about their description.
A. I'm sorry.
Q. Why was their description entirely subjective?

A. I didn't say their description was entirely subjective.
Q. Okay. Then I withdraw the question.
A. I said the symptoms that they complained of were entirely subjective.
Q. All right. Incidentally, the -- this -- the first letter that Dr. Hubbuch wrote about the -- the concerns that the mother expressed involved just the mother's description of the symptoms; correct, not G's?
A. That's correct. G was not present at the visit where she obtained that information.
Q. But you have described other circumstances where third parties can make descriptions of symptoms, and that's a good place for you to start.

Do you recall that?

A. That is a common feature, but it's almost always corroborated in competent clinical practice --
Q. Right.
A. -- by obtaining information from the patient themselves. Firsthand information is always better than third hand.
Q. Right. Well, the mother told you about symptoms; correct?
A. That's incorrect.
Q. I'm sorry. The mother told Dr. Hubbuch about symptoms?
A. That's correct.
Q. And you expressed concern that it was the mother and not G himself who told you about those symptoms, didn't you?

A. I did say that.
Q. All right. Now, there came a time later when G went into Dr. Hubbuch's office and was interviewed by Dr. Hubbuch; correct?
A. I don't know that G was interviewed by Dr. Hubbuch.
Q. Don't the records reflect that Dr. Hubbuch saw G and took a history?
A. It doesn't say that G provided the history. It says that G was seen with his mother.
Q. Do you remember any --
A. It doesn't say -- it doesn't say that the history came from G.
Q. Do you remember -- do you remember anything from Ms. Hubbuch -- Dr. Hubbuch's deposition that described how that information came to be in her notes?
A. I don't.
Q. Okay. And just to go back to this, it is appropriate medically, is it not, for a doctor to take symptoms at least initially from a third party who has reason to know those symptoms; correct?
A. That should never be the -- that should never be the first approach. If you can get firsthand symptoms, the medically responsible thing is to get firsthand symptoms first. If I've got a patient in front of me why would I go ask somebody else when I can ask the patient.

Q. Right. But I did ask you that. I asked you whether in the first instance if you're speaking to -- well, if you're speaking to the mother, it's appropriate to take the mother's description of the symptoms, correct, subject to further analysis later? That's a fair way to start, isn't it?

A. That's a fair way to start.

Q. All right. And the first time there was a conversation was when the mother did that, fair enough?

A. That is what happened the first time.

Q. Okay. Now, the second fact on the bottom of page 1 of Exhibit 2 is that his symptoms were experienced while he was in school at Fay, and they abated when he left school; is that a relevant fact to consider?

A. It's a number of facts that one should consider.

Q. I asked you whether that is a relevant fact that should be considered?

A. Yes, it is.

Q. Okay. By the way, did Dr. Lebel go to the school?

A. No. Dr. Lebel was not asked to do an environmental evaluation. She was asked to do a headache evaluation.

Q. I just asked if you could answer. Didn't she give an analysis of what was causing the headaches? Wasn't that why she went? Isn't that why she gave an opinion?

A. She provided a clinical evaluation --

Q. Okay.

A. -- of headaches.
Q. Right. And she did not go to the school?
A. She did not provide an environmental evaluation.
Q. And Dr. Woolf did not go to school?
A. Dr. Woolf had a limited opportunity to get information so his evaluation could not be complete.
Q. Would it have been better had he gone to the school to see what was there?
A. Once he had a -- once he had an accurate and thorough history, it might have been, yes. In my practice, I would have gone, but only after having a complete history.
Q. But they didn't go so far as you know?
A. Because they couldn't get a complete history.
Q. Do you know that? Do you know that's why they didn't go; yes or no?
A. Dr. Lebel doesn't do environmental evaluations so it's unreasonable for her to do so. Dr. Woolf would have if that had been -- if that had been completed. I've done site visits with Alan Woolf myself.
Q. Did you discuss this case with Dr. Woolf or Dr. Lebel?
A. Neither one.
Q. Okay. Did you read their depositions?
A. No.
Q. All right. The next one. The top of page 2, "The symptoms returned when he returned to school the next day."

Is that a reasonable thing to -- about which to inquire?

A. Yes, it is.

Q. And quote, next one, "During the holidays and over the summer recess when he was not at Fay, he did not experience those symptoms."

Is that a reasonable thing to determine to cite?

A. I mean all of -- yes, but all of this is very imprecise.

Q. I didn't ask you that, sir.

MR. DOYLE: Objection.

THE COURT: No, wait a minute. Hold up a minute.

I need the lawyer who did the direct to do the objecting. To the extent, Ms. McKean, you object, that is overruled because he has not responded to the question.

Remember my admonition.

THE WITNESS: I'm doing my best.

MS. McKEAN: Your Honor, he answered the question.

THE COURT: What?

MS. McKEAN: I said he asked him if it was reasonable the first time. Now, he's changing the question.

THE COURT: Yeah, and he goes off on a tangent. I mean, let's -- let's stay on task here, and we'll get done a lot faster.

Let's have a question, please.

BY MR. MARKHAM:

Q. All right. So that was worth noting, fair enough, in terms of the analysis she was trying to get to, which was what is causing these symptoms, all of them, that during the holidays and over the summer recess when he is not at Fay, he is not experiencing these symptoms?

A. Yes.

Q. All right. Next one, "At Fay, WI-FI is frequently in use."

That's noteworthy as well, fair enough?

A. Okay.

Q. And "each classroom has WI-FI radio waves beamed to the classrooms from an access point..."

That's relevant; right?

A. Okay.

Q. All right. I'm just -- do you see anything in the rest of that, the rest of that paragraph that's not relevant to the inquiry at hand?

A. (Pause.) Okay.

Q. Okay. I'm going to skip the next one, because it's kind of a repeat. The next one starts with "nurses." "Nurses' records from the school reveal that G frequently had to leave classes because of these symptoms."

Is that noteworthy in these circumstances?

A. Possibly.

Q. Okay. And the next one, "In January, 2016, G withdrew

from Fay pending the results of this lawsuit and started attending The Waldorf School in Lexington, Massachusetts. The Waldorf School does not have WI-FI in its class or hallways. G has not experienced the symptoms he experienced at Fay since he has started attending classes at the Waldorf."

Is that something that as a clinician you would think is noteworthy for her to recite?

A. Noteworthy?

Q. Is that a yes?

A. Yes.

Q. Okay. Now, she says in the next sentence that, quote -- actually, she said, "G has not been told that he has Electromagnetic Hypersensitivity Syndrome and in my examination of him, he did not reveal to me that he has ever been told this."

Can I just ask you very straight up. What do you think about the fact that he was not told as of this time about what the mother thought he had?

A. What do I think about it?

Q. Yeah. As a clinician.

A. As a clinician?

Q. Yeah.

A. As a clinician, it demonstrates just that they're not willing to tell an individual of it. I don't know the rationale behind it. I don't know the motivation behind it.

Q. Did you read, Dr. -- I thought were you finished?
A. You're asking for my impression?
Q. Yeah.
A. I can have an impression. Direct me. I think it's important to note that it may be impossible for someone to be totally unaware of something, particularly if they find magazines at home about WI-FI, WI-FI problems, or hear parents talking about it. So I don't know how, just like it may be difficult to get a 12-year-old boy to do a headache diary, it may be difficult to keep a child totally in the dark about something.
Q. All right. I didn't ask you about his effectiveness. I asked you about your impression as a clinician in the parents' attempts not to tell G what they were trying to figure out whether he had or not?
A. That would have been my impression as a clinician. If I had a student at the bedside or student away from the family so, you know, G wouldn't hear about it, that's what I would have taught the kid. That's what I would have taught the trainee.
Q. So you think what, that they should have told him, or they should have tried to keep it from him?
A. I said you can keep somebody -- you can try to hide something from an individual. I -- my teaching would have been I don't know how likely that is.

Q. Okay. But I asked you about the reason for doing it, if you thought there was a good reason to do it?

A. I don't know that there is.

Q. Okay.

MR. MARKHAM: Your Honor, is this a good place to stop?

THE COURT: Sure. What's -- Doctor, thank you. You can step down. Don't leave yet.

So what is counsel's availability on July -- or more importantly, Dr. Boyer's availability on Wednesday, July 27th? When are you leaving?

THE WITNESS: I'm leaving on the 28th. I have got -- I have got a clinical shift scheduled on the 27th.

THE COURT: How about the 26th?

THE WITNESS: What day is that?

THE COURT: That's a Tuesday. We probably have to be in the afternoon.

THE WITNESS: What time in the afternoon?

THE COURT: Well, we can work around you.

THE WITNESS: I have a meeting -- I have a meeting that runs until around 12:30 or so.

THE COURT: How long are you going to be?

MR. MARKHAM: About an hour.

THE COURT: How long are you going to be?

MS. McKEAN: I think an hour would be safe. I don't

think it's going to be that long. Yeah, I mean I think half an hour would be fine.

THE COURT: So do I.

Does two o'clock work?

THE WITNESS: Two o'clock?

THE COURT: Yeah.

THE WITNESS: Sure.

THE COURT: We'll see you then.

MR. MARKHAM: Two o'clock on the 26th?

THE COURT: On the 26th.

All right. Thank you, everybody.

MR. MARKHAM: Take care.

MS. McKEAN: Thank you, your Honor.

(At 1:13 p.m., Court was adjourned.)

C E R T I F I C A T E

I, Marianne Kusa-Ryll, RDR, CRR, do hereby certify that the foregoing transcript is a true and accurate transcription of my stenographic notes before the Honorable Timothy S. Hillman, to the best of my skill, knowledge, and ability.

/s/ Marianne Kusa-Ryll — 7/19/16

Marianne Kusa-Ryll, RDR, CRR — Date

Official Court Reporter